

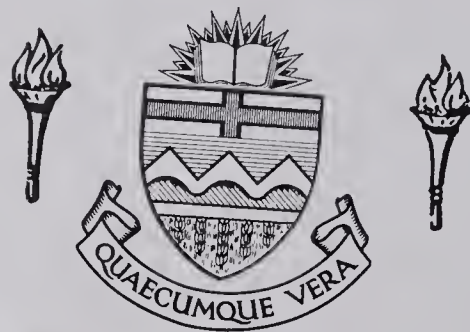
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THE UNIVERSITY OF ALBERTA

AN INTERDISCIPLINARY APPROACH TO OUTDOOR EDUCATION
AND SELECTED PROGRAM IMPLICATIONS
FOR ALBERTA GRADE SIX PUPILS

by



JANICE JAMES

A THESIS

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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled An Interdisciplinary Approach to Outdoor Education and Selected Program Implications for Alberta Grade Six Pupils submitted by Janice James in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

Throughout history, outdoor education has been practised as a method of teaching and learning. This thesis attempts to summarize the historical rise of school camping in the United States, New South Wales (Australia), and Canada. Studies related to programming and the effects of the outdoor experience, cited in chronological order, have been cited in Chapter III.

As all program areas included in an approved curriculum are based upon a conceptual structure, this study cites the conceptual learnings in each of the subjects to be taught at the Grade VI level in Alberta. (Refer Chapter VI) Chapter V, using the out-of-doors as the medium of learning, presents numerous examples of activities which will teach the required concepts at the Grade VI level.

The appropriate steps for the actualization of the outdoor experience have been outlined for the individual teacher in Chapter VI. This chapter concludes with examples of possible testing devices for the purpose of evaluation.

To further assist those undertaking such a venture, examples of pre-camp activities suited to the classroom have been included in the Appendix along with samples of Grade VI school camp programs and sources of pupil work books and teacher guides.

ACKNOWLEDGEMENTS

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To Dr. W. D. Smith a special word of thanks, for without his patience and guidance this study would not have been conceived.

The gratitude of the writer is also extended to her parents, Mr. G. Glassford, Miss M. Long and Dean M. L. Van Vliet, for their concern, patience and practical advice.

to teacher's everywhere . . .

"Let the main objective of this,
our didactic, be as follows:
To seek and find a method of
instruction, by which teachers
may teach less, and learners
learn more"

John Amos Comenius,
1592 - 1670

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CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

In this atomic age with its speed, regimentation and mechanization, individuals in our population are taught skills of a kind that only remotely resemble those learned by their forefathers. It is only in the camp setting that a youngster is given the opportunity to experience some of the ageless physical, yet practical skills.

Water can now be bought in cans and stored away for future use; likewise food. Vitamin, salt and water purification tablets - all are included as part of the "survival" kit of to-day. But what of the skills of the pioneers of this country? Their meat had to be tracked, killed and dressed; edible vegetation had to be gathered. Shelters had to be hewn from the forests and clothes made from skins. The need for these necessities of life existed perpetually. Hence every waking hour was filled with work which required skill, patience and perseverance.

We know that the experiences encountered by an individual during the course of his life-time educate him. That which he encounters he evaluates in the light of earlier experiences which he knows and accepts as being the mores of his particular society. Piaget (46:358-359) says:

. . . the greater the variety of situations to which the child must accommodate his behavioral structures, the more differentiated and mobile they become. Thus, the more new things a child has seen and the more he has heard, the more things he is interested in seeing and hearing. Moreover, the more variation in reality with which he has coped, the greater is his capacity for coping.

In our society time restricts the individual so that technologically efficient use is made of each hour, facility and authority. Energies are channelled, power is harnessed, and attempts to consistently achieve and improve optimum efficiency is the goal. So it was with the pioneers, inventors and nation-builders of old, as by trial and error, they built the firm foundation upon which present day explorations, technologies and policies are structured. To imply that man return to the primitive way of life of his forefathers is to decry the basic aims of education for which his ancestors worked.

The Problem

This is a study to show an interdisciplinary approach to outdoor education and to give selected program implications for Alberta's grade six pupils.

Rillo, (et al) (70:1) believes:

Outdoor education is a process of education which utilizes outdoor resources to teach that which can be effectively learned there. Outdoor education, as a means of curriculum enrichment, applies to many subject matter areas of the elementary and secondary school and to many courses at the college level. . . . It utilizes teaching methods and techniques based on a philosophy of experience learning through direct contact in the community and natural areas.

To-day educators rely heavily on artificial replicas to illustrate and demonstrate those areas of the curriculum which could be conceivably taught in the out-of-doors. The Department of Education in Alberta is aware of this for it states (22:30):

One very real danger is that elementary science may degenerate into a purely text-book course. For the study of living things and natural phenomena the countryside is the child's natural laboratory. Observation of real things and happenings will arouse wonder and stimulate curiosity.

Teacher training for this educational medium is either lacking or insufficient to meet current needs. With more relevant and practical information St. Clair (83) believes the task of conducting a resident outdoor school will become less burdensome. This thesis is designed to provide such information in one of the deficient areas, that of suitable program activities for Alberta's grade six children.

Significance of the Problem

Outdoor Education is a common sense method of learning. It is natural; it is plain, direct and simple. The principal thesis which underlies the implications of outdoor education for all subject matter in all areas of study and at all levels is stated by Smith (79) as cited in (81:21).

That which can best be learned inside the classroom should be learned there. That which can best be learned in the out of doors through direct experience dealing with native materials and life situations, should there be learned.

This realistic approach to education rests squarely upon the well established and irrefutable principle of

"learning by doing". It is a way of teaching and learning which can cut across any discipline (81:41) as it makes the best use of the out-of-doors.

Today's society places the emphasis on the academic training of the individual. The rest of the child's all-round development is given inconsistent nudges by parents, teachers, peers and other adults with whom he comes in contact. Through exposure to a great variety of these individuals on a round-the-clock basis, even for a short period of time, he acquires an assortment of new skills, new knowledges, deeper understandings and appreciations which might otherwise be denied him.

With the increase in experimentation in the field of outdoor education in Canada and particularly this province, pertinent information about activities appropriate to the curriculum, yet, undertaken in the out-of-doors, is necessary. At this time only a small percentage of present teaching staffs has had any formal training in areas appropriately associated with outdoor education. Thus, this study, consisting of program ideas and activities, has been undertaken to assist them in their endeavour to provide a worthwhile program.

Although this thesis is primarily designed for teachers accompanying school groups into a resident camp situation, the activities outlined could be of assistance to parents and leaders interested in the field of outdoor education.

Likewise, the activities are appropriate for development over a period of time or as isolated half-day experiences of an educational, yet challenging, nature.

For be it remembered, these children with the training they receive - or do not receive - with the instincts they inherit and absorb in their growing up, are to be our future rulers, if our theory of government is worth anything.
(69:134)

Limitations

All elementary school resident camping programs in the United States, Australia and Canada involve division II only, and the greater majority of these are limited to the sixth grade. For example -- the school districts of

San Diego	California
Portland	Oregon
Seattle	Washington
Boulder	Colorado
Denver	Colorado
Battle Creek	Michigan
Pontiac	Michigan
Carbondale	Illinois
Rockford	Illinois
Vincennes	Indiana
Bloomington	Indiana
Gary	Indiana
Greater New York	New York
Albany	New York
Toronto	Ontario
Halifax	Nova Scotia

Regina	Saskatchewan
Grande Prairie	Alberta
Calgary	Alberta

and the Department of Education controlled camps for the state of New South Wales, Australia. Although the latter's facilities are not used exclusively for grade six pupils as some fourth and fifth grade students do attend their camps.

Each administration has its own criteria for recommending that the camp experience be taken in grade six but collectively they agree with the following points:

1. That many of their educational objectives (e.g. those of the province of Alberta) call for the teaching of intangible concepts which are all encompassing when applied to our daily lives e.g., tolerance, respect for others and emotional control. Yet periods of instruction are short and a schoolday brief, so fact learning and understanding of concepts are given greater credence than the integration of these into the child's life. This gulf can be partially filled with a resident camp experience. (39)

2. That grade six is usually the last year the child has the one teacher for most of his education.

Outdoor Education provides for integration of learning in a setting that makes teaching more creative, and also is directed toward the acquisition of specific skills and knowledge. There is a permissive atmosphere which develops teacher-pupil rapport and allows students to become actively involved in planning with the teacher for learning experiences. (93:159)

This active involvement also pertains to the learning experiences involved in the preparation and subsequent

learnings following the experience in the classroom. The same teacher can thus better integrate all aspects involved during the child's school year.

3. That education has developed so rapidly on this continent that things which were right for their time became swept along by the momentum of progress and are now embedded as traditions of the past, even though we know that many of them are no longer desirable for the present. So change must come, but Northway warns (63:15)

If outdoor education merely intends to move the structure and procedures of conventional education from the classroom to the countryside, we may as well forget it and consider re-establishing the little one-room school.

4. That at the age of 10 - 12 years, a child is physically, socially and emotionally ready for such an experience away from home with his peers (see chart page 11).

5. That led by mature, responsible individuals, a camper will find it is possible to integrate those basic concepts he has been attempting to master throughout his elementary grades and which form the basis of his future education. This is feasible when the program allows for

- a) practise and reinforcement of learned skills.
- b) an opportunity to combine known skills into meaningful experiences.
- c) exposure to new skills and situations which may be of immediate use or for future recall and substantiation.

6. That an educator making use of the out-of-doors as a laboratory will be guided primarily by the policy of

the administration for whom he is working and secondly by the purpose of the venture, the season of the year, the physical features of the area in which the learning experience is to take place, the numbers involved, the length of the experience, the teacher-pupil ratio and the creativity of those involved.

The activities suggested in this study will be outlined briefly and should be used only as guidelines for the compilation of the outdoor education program which should give credence to the above criteria, and those pertaining to the local school board.

The criteria for selecting the activities listed in this study are based upon the aims and objectives listed in (23) and the concepts which are to be taught to, and learned by, grade six pupils in this province as approved by the Department of Education for the Province of Alberta and listed in the recommended texts for that grade by the same authority. Hence:

Objectives of Education for the Province of Alberta

The major purpose of elementary education is to foster the fullest development of each child's potentialities. Direction for this development is provided by the behavioral goals listed below.

I. Abilities and Skills

Each child should increase his capabilities to: -

1. Communicate with others orally and in writing.
2. Listen.
3. Read.
4. Find, organize and use information.
5. Use numbers and mathematical processes effectively.

6. Solve problems of a social and scientific nature.
7. Express himself through artistic media.
8. Maintain health.
9. Function as a wise purchaser and consumer.
10. Maintain concentrated efforts in accordance with native ability and natural maturation. (23:4)

II. Understandings

Each child should learn to recognize the significance of: -

1. a) The social life of expanding communities.
- b) The interdependence of all forms of life.
- c) The effects of environment on human life.
- d) Man's increasing knowledge of social development and social control.
- e) Man's increasing control over nature.
- f) The contributions of the past to the present.
- g) Democracy as a way of life. (A camper may have a choice of decisions and may express his views.)
- h) Responsibilities inherent in a democratic way of life.

(23:4)

III. Attitudes

1. Establishing loyalty to the ideals of democracy and acquiring an appreciation of his community, the province and the nation. (20:16)
2. Self-respect - marked by control, discipline and direction through his own initiative. (23:4)
3. Creativeness - marked by personal expression which becomes unique and revealing. (23:4)
4. Scientific viewpoint - marked by the power to delimit problems, search for data, weigh evidence, form conclusions, and above all to evaluate his judgement in the light of subsequent events. (23:4)
5. Co-operation - marked by consideration for the rights and feelings of others and a willingness to share. (23:4)
6. Responsibility - marked by readiness to carry tasks to completion, to behave honestly with himself and others, and to accept the consequences of his own actions. (23:4)
7. Social concern - marked by earnest effort to implement whatever desirable ends his group may seek. (23:5)
8. Reverence - marked by a conviction of Deity, and a regard for His supreme handiwork, mankind. (23:5)

9. Seek to obtain the child's greatest enjoyment and educational development in a camping experience. (12:6)
10. Assist children to attain poise through learning personal responsibility and good judgment in all areas of their lives. (12:6)
11. Objectivity - the child should be encouraged to focus his attention on the elements of the activity rather than on his own personal feelings. (12:6)
12. To develop desirable personality traits such as leadership, co-operation, sportsmanship, courage, persistence, tolerance, self-confidence, initiative, self-discipline, a proper attitude towards victory and defeat, dependability, honesty, loyalty, respect for rules and laws, respect for others and emotional control. (21:68)

IV Appreciation

Through suitable experiences each child should acquire an appreciation of:

1. The dignity, worth and possibilities in the individual, reflected in a high standard of conduct for himself, and a high regard for other people and their values and beliefs. (23:5)
2. The dignity, value and achievements of work in science, in religion, in philosophy, in art, in literature, in craftsmanship, in honest labour everywhere. (23:5)
3. The manifestations and beauties of nature - both in the natural state and as revealed through science. (23:5)

THE PHYSICAL, SOCIAL-EMOTIONAL, AND MENTAL CHARACTERISTICS

OF CHILDREN IN GRADES 5 - 6

Physical Characteristics	Social-Emotional Characteristics	Mental Characteristics
- Showing rapid physical development, but there is a danger of damage to the heart as it is developing at a much slower rate.	- Tendency to be emotionally unstable	- Interested in the world, and their community and idealistically want to improve both.
- There is evidence of a rapid increase in strength especially among the boys. Children display a robust, active and noisy approach to activity.	- Attachment to adults is waning	- Become discouraged easily at mastering new skills, knowledge, understandings, etc.
- Children give evidence of coordinated skills being automatic.	- Peer ties are strong, with girls forming close associations that are socially exclusive while boys are joining "gangs" bound for adventurous or destructive activities.	- Often exhibit restlessness.
- Beginning of sexual development both internally and externally.	- Peer approval is paramount.	- They often exhibit initiative and creativity.
- Appearance may alter as body matures, e.g. pimples.	- Are seeking independence and recognition.	- Have an almost insatiable curiosity.
- Boys are limited by their skill in sport, but are slowly developing skills involving the small muscles of the body.	- Some personality complexes appear at this stage.	- Children at this stage like to read about, or listen to, great people.
- Appetites appear large and energy freely discharged.	- Often their enthusiasm exceeds their wisdom.	- Although they enjoy learning new things, their attention span is short.
- Growth appears to be in a steady increase, e.g. arms and hands growing longer and bigger.	- Children becoming more "other" centered.	- Seek adult approval of school work.
	- Often a hero of either or both sexes is emulated.	- Are concerned with feelings of right and wrong and justice.
	- This is a period of hero-worship.	
	- The family is still the symbol of security to the independence-seeker and he returns to it when necessary. Conflicts between these two appear more often.	
	- Are often aware of, and sensitive to, criticism.	

Physical Characteristics	Social-Emotional Characteristics	Mental Characteristics
- Large muscles growing in length.	- Are more inquisitive about human relationships.	- Tend to read more and think a lot more.
- General appearance is one of being long-legged and gaunt.	- Interest in personal sexual development and the opposite sex is slowly developing.	- Their thoughts are often of sex.
- Because of natural activity, most are in good physical condition although posture may seem poor and may become habitual if not corrected.	- Concern over personal appearance especially in girls.	- By age 11 most youngsters have outgrown laughing at others.
- Accommodation in the eyes is rapid and focussing adequate although near-sightedness develops in some.	- Exhibit responsibility and want to be considered trustworthy.	- Their intellectual growth seems to parallel their developing sense of values and honor.
- Children display more grace and skill in locomotion.	- Personal conflicts tend to be exhibited as "worry".	- While girls appear generally more sedate, boys like to fight, yell and tease.
- Sex differences are becoming more pronounced.	- This is a period of self-challenge and discovery.	- At this stage youngsters appear more comfortable in adult company and like to talk seriously with their adult "hero".
- Children show an increase in resistance to disease and faster recoveries from disease.	- Can detect insincerity quickly.	- A strong sense of loyalty is apparent.
- Weight gain appears to average between 7-9 pounds; and in height 2-2 $\frac{3}{4}$ ".	- Display extremes of emotions with little provocation.	
- At this stage long bones and pelvis appear susceptible to injury.	- More negative personal responses are displayed at home, e.g., sulking, resentment, anger, but not as often with peers.	
- Children in this age group are generally more keen to learn physical skills and to demonstrate prowess. Practise is	- Loyalty and acceptance are vital needs.	
	- Their value system is becoming more pronounced e.g., good sportsmanship, moral conduct and personal endeavour to achieve appropriate goals.	

Physical Characteristics Social-Emotional Characteristics Mental Characteristics

- an integral part of their learning.
- Boys and girls tend to perform equally well in many activities.

Also refer:
(94:iv)
(89:148)
(24:10)
(80:309-435)
(87:45-46)
(58:7-29)

Definition of Terms

- Activities - in this study, refers to those experiences offered by a resident outdoor school involving individual or group participation.
- Concept - "abstract ideas generalized from particular experiences." (23:33)
- Curriculum - this is considered to be the series of activities for which the school assumes responsibility. (93:19)
- Education - this is the process of forming and developing one's knowledge, skill, mind or character. As well, it can mean 'to train' through formal schooling or study.
- Exploration - the enquiry into each activity using one, some, or all of the five senses.
- Outdoor Education - "is a way of teaching and learning which can cut across any discipline..." (81:41) as it makes the most effective use of the natural environment.
- Program - the course of studies followed in order to acquire knowledge.
- Relationship - the way in which the one course of action stands or is related to the other.
- Resident Outdoor School - (used interchangeably with 'school camping' in this study).

- "is an aspect of general education involving learning experiences that can best be achieved through a twenty-four hour group living experience in a camp-like setting."

(93:19) This experience may be as short as one day or as long as two weeks.

Organization of the Remainder of the Study

Some parts of the United States, Australia and England have had resident outdoor schools as part of their educational systems for more than fifty years. Their development of this educational medium has led to a great many experiments in other countries to the point where this medium is recognized nationally and legislation on a National, State or Provincial level has been enacted. Because of this, the historical development of school camping, particularly with regard to programming, in two of these areas of the world, has been summarized in this study. Canada, with her brief history of camping appears to be following the pattern of these two.

As a result of experimentation, more areas of concern with respect to the effects of camping on the child, the administrative difficulties, the preparation of personnel and the acquisition of areas and financing, etc., have been studied. Those in relation to this study have been summarized and examples of experiments undertaken at the Grade VI

level in Canada have been included.

Because relevant information on recent experiments is not always available in printed form, personal contact has been made with leaders, on this continent, in the field of outdoor education. Pertinent information gleaned from these people will be included in the study as well as information from other documents, briefs, articles, newspapers and unpublished theses.

Upon this basis, the body of this study will be developed. Outdoor education is an accepted medium of learning and because it is recognized by the Department of Education in Alberta for its students, the study will use the authorized concepts that are to be learned at the sixth grade level as it presents those activities, adapted to the outdoor setting, that best illustrate the concepts for each subject area of that grade.

In so citing the activities, materials and visual aids appropriate to the area will also be examined and references included wherever applicable, e.g., for maps, charts and illustrations, etc.

In the final chapter some of the administrative aspects of pre-planning and post camp evaluations are considered. An outline of the initial steps taken by a teacher wishing to introduce outdoor education into his school have been included. Following the camp experience, a submission, including an evaluation, is required by the School Board. Therefore, examples of testing devices of both a formal and an informal nature have been given.

These are primarily program oriented.

The conclusion is followed by three appendices
namely:

- a) Examples of activities that could be undertaken in the classroom prior to a resident outdoor experience.
- b) Examples of programs used in outdoor education centers for grade six children.
- c) A list of sources of information including addresses for Teachers' Guides and Camper Work Books suitable for on-the-campsite use.

CHAPTER II

THE HISTORICAL DEVELOPMENT OF SCHOOL CAMPING WITH PARTICULAR REFERENCE TO PROGRAMMING

1. In the United States of America

The initiation of organized school camping has been credited to Mr. and Mrs. F. W. Gunn. They organized short excursions during the academic year and culminated these with a two week summer camping trip to Camp Comfort near Welsh's Point, Connecticut in 1861. Lake Waramough later became the permanent camp site for Camp Gunnery and the annual two week event became an integral part of their school's curriculum.

A camp for "weakly boys" was pioneered by Dr. J. T. Rothrock at Wilkes Barre, Pennsylvania in 1876. His camp was organized at Lake Gonago as a School of Physical Education. The program was to include physical exercise in a woodland setting while tempered with skills and knowledge which were not usually given in an academic curriculum. This camp was conducted for a period of four months at a cost of \$200 per child. But at the conclusion of its first session the scheme was abandoned "as it failed to pay expenses." (38:24) A total of twenty campers and five teachers participated in this first venture. Although

others tried to succeed in the following two seasons, a profit could not be made.

In 1880 Rev. George Hinckley conducted a camp on Gardner's Island near Wakefield, Rhode Island for boys from his parish. The program included physical activity, religious education, evening entertainment and various other skills of an educational nature. The name of the camp became known as Goodwill Camp and the site was changed to Hinckley in Maine.

Then, "In 1881 Ernest Balch established Camp Chocoras on Burnt Island, New Hampshire." (13:31) His motive being that, in his considered opinion, the boys of well-to-do families living in summer hotels were in poor condition and so, to assist their proper development, he established his camp.

For nine years Camp Chocorus served as a laboratory where he worked out most of the essential features of organized camps as they exist to-day. His practices were copied in other camps and many of his campers later established camps of their own. (13:31)

Mr. and Mrs. Luther H. Gulick are credited with commencing camping for girls. They conducted a camping trip for their daughters in 1885 and periodically other girls were taken on a paying basis. The River Thames in Connecticut was their camp site.

It is believed that the first camp conducted by a public school was that organized by the Board of Education in Dubuque in 1912.

Iowa cooperated with the Visiting Nurse Association in establishing a Summer Camp for undernourished school children. One of the earliest camps for normal boys was organized by the Chicago Public Schools in 1919. This camp was established in cooperation with the War Department and an association of business men. It was primarily an R.O.T.C. camp but activities such as sports, lectures, campfire programs, and crafts were a part of the program. By the early 1930's at least seven cities in the United States had camps maintained or directed by boards of education. (13:35)

School camping is said to have "come of age" in the mid 1930's. Some attribute this to the changes in thought that came as a result of the depression.

Perhaps the impetus for the movement can be credited to the stimulus of agency or private camps, the need for the public schools to extend the scope of education resulting from a deterioration of the traditional functions of the family, or other education and sociological factors. It would seem most logical that this was an inevitable emergence of our constantly changing culture and the educator's attempt to keep abreast of the re-shaping cultural pattern. (83:1)

The term outdoor education is the combined experience of people in the fields of camping, conservation, education, natural science, physical education, recreation and social welfare. Their efforts have been united into the current educational movement that is gaining momentum with the years. To some, outdoor education refers to all those activities that can be best accomplished outside of the four walls of a formal school, yet not confined necessarily to a camp setting. To further the movement, many of those conducting summer camps held teaching positions during the academic year. They transferred many of the aims and objectives

from the departmental syllabus to their programs and so the summer camps developed in a parallel fashion to school camps.

2. In New South Wales, Australia

The Department of Education in New South Wales is credited with the development of comprehensive school camping. The history of this scheme has been recorded only in the past decade. From the first beginnings in 1906 the development appears to have progressed in three separate stages, 1906-1915; 1915-1939; and 1939 to the present day.

During the first stage the movement was entitled "the Rural Camp Schools". This came as a result of comments made by the Director of Education in September, 1906. He said that unless some definite scheme was brought into immediate effect, city school children would not get the opportunity to observe country life, and that as the years progressed this deprivation would become more widespread. He acknowledged the efforts of some teachers who had made the attempt to bridge the gap with the remark that the beneficial results proved it to be desirable. The Department of Education at that point was prepared to include this practice in the primary school routine.

The first experimental camp was conducted at Duckenfield Farm in the Hunter Valley approximately one hundred and twenty miles north of Sydney. One hundred and forty six boys from schools in Sydney with fourteen teachers set out with borrowed equipment for the first school camp. The

Government Medical Officer for the Newcastle district supervised the medical tent; the Department of Education assumed the costs involved for staff; the boys paid ten shillings and sixpence each to cover their fares and the cost of their keep, and their week long camp began on October 3, 1906. The camp was so successful, that before the end of the year a total of 576 boys and 48 teachers had participated in the scheme. As many of the boys had had little opportunity to experience the activities of "country life", every assistance was given to them by local farmers. This educational experience, the strict discipline and the instruction "constituted influences favourable to the cadet and citizen soldier movement and to the development of the broad national sentiment that should underlie it." (25:44) The following year the program more than doubled and two camps were held in different centers - one west and the other south of Sydney.

By 1908 the total number of participants and teachers since the beginning of the movement, rose to 2,600 and 210 respectively. In 1909 the largest camp ever conducted in New South Wales was held at Morpeth. Six hundred and thirty four boys attended.

The Chief Inspector's 1909 annual report stated:

It is now over three years since this movement was inaugurated, and it is not too much to say that it has proved most successful in regard to the objects for which it was intended. Continuous instruction is the keynote of these Camp Schools. The venue is simply changed from the public schools to the tented field, and instead of the prescribed text-books being in use the

book of Nature is studied, and the lads brought, in an interesting way, into contact with every form of agricultural labour.... Under the guidance of an intelligent teacher, and with the assistance of the farmers, who, it is pleasing to relate, display a most cordial and co-operative spirit, the whole of the workings of this agricultural life is revealed to hundreds of eager and inquiring boys, whose minds are in a keenly receptive state. What is seen during the day is discussed in the quietude of the camp at night, and the impressions sown in the minds of the boys are lasting ones. (25:44-45)

Post camp evaluation of the scheme by teachers showed that 125 boys had accepted some type of agrarian occupation and a further 25 were continuing their studies at Farm Schools or Agricultural Colleges.

Each year the locations of the camps were changed and as a general rule three different centers were used each year. The agrarian population welcomed the Department's effort and extended this to the campers and staff.

During the academic year of 1911 a winter camp was organized "(which was quite as successful as the others)". (25:46) As well, the Department of Education supplied the necessary camping equipment to each participant.

One thousand, five hundred and twenty eight boys and 109 teachers attended the three sessions held in 1912 making the school camp practically continuous. "Applications to attend exceeded those numbers, but for organisation purposes it was necessary to limit each school to one unit of twelve boys per term." (25:46)

The year of 1913 was another successful one for the Rural Camp Schools. The Department of Education had been asked on a number of occasions to conduct camps in the cities

for rural youth. This plea was refused on the grounds that it would entirely defeat the purpose of their present camping scheme!

In 1914 one session began on February 26 and concluded on April 8th. At this session boys from the rural Newcastle area were included. With the outbreak of World War I the Rural Camp Schools were suspended, but the Minister for Education made it clear in his annual report that this was a temporary arrangement and that as soon as the crisis was over the scheme would be resumed.

Unfortunately, these camping periods were not renewed officially by the government until 1938 although interested headmasters encouraged field trips and excursions from their individual schools. Many teachers took advantage of the outdoor environment to enrich their classroom work. Interest was so engendered in this period that formal approaches to the Department of Education were made to coordinate the efforts of teachers and to expand the potential learning environment.

1939 saw the beginning of the modern era of school camping in the state of New South Wales, Australia. Mr. Gordon Young, a former Canadian Y.M.C.A. secretary, accepted the position of director of Physical Education for New South Wales in 1938. He was instrumental in having lands leased to the Department of Education from other governmental departments or bought for purposes of education. In 1939 the first school camp of the new era was conducted on official camp property at Broken Bay. From this under-canvas-camp,

the movement has grown to nine permanent camps and a total of approximately 10,000 acres of natural bushland. Many of the camps have a common boundary with crown land or other natural areas administered by trusts, or the Chief Secretary's Department which controls the Fauna Protection Board and the Wildlife Service.

Approximately \$2 million dollars Canadian is the current value of camp buildings and facilities in New South Wales. Three of these camps offer a continuous ten day program throughout the entire year. During the three regular school terms of the academic year, any child in primary school with a minimum age of 10 years is eligible to attend one of these camps. The State is divided into Inspectorates similar to the areas designated as school districts in Alberta. Each Inspectorate is given the opportunity to send youngsters once per year. The time of year allocated to the Inspectorate rotates each year. These three camps are, in fact, coeducational schools. They are in the category known as Schools for Specific Purposes and are staffed by departmental teachers headed by a principal. A nurse resides in the camp hospital and is employed by the Department of Public Health. Approximately 9,000 youngsters have this ten day experience each year. The program consists of activities in physical education, recreation, natural science, social studies, bushcraft, handcraft, health, etc. (See Appendix B)

Narrabeen Lakes camp is conducted on a five day basis. This camp is used for whole school projects. Sports coaching

and training camps are conducted there during weekends. It is available to both primary and secondary schools from the Sydney or near Sydney area. These camps can be co-educational, and the program is adapted to the group's needs e.g., primary school children cover some of the practical aspects of their curriculum and secondary children take advantage of the recreational, biological science and vocational activities.

Another of the camps is operated on a three day basis for secondary school students only. Separate boys and girls camps are conducted and the program emphasis here is on bushcraft and camp craft skills.

Four other camps are used mainly during school vacations, although many schools adjourn to the campsite in their area for whole school projects such as is undertaken at the Narrabeen camp for Sydney's schools. In cases such as this, a camp director is provided by the Department of Education and the remainder of the camp staff accompany the children from their own schools.

In the foreseeable future school camping in New South Wales will encompass the widest possible variety of activities and give each child the opportunity to see and experience as many different environments as the state can offer.

3. In Canada

Canada has a new history in the field of outdoor education. According to Scholes (74:15) school camping had its Canadian beginnings in Ontario in 1950 and by 1954 four of

Toronto's schools were experimenting with school camping programs. Surrounding districts were inspired to try this new field and soon the areas around Guelf, the Humber Valley Conservation Area and the Muskoka Lake district were being used as outdoor laboratories.

In 1959 The Island School was established as a year round camping site by the Board of Education for the city of Toronto. This camp, the first of its kind in Canada, was set in 100 acres of natural woodland on Centre Island facing Toronto's harbour (8:1). This camp had a permanent staff consisting of: (8:12)

... a secretary, a matron, a nurse, four science teachers, six Teachers' College students and an assistant director, all under the supervision of Director, Robin Dennis.

In addition one male and one female teacher came with the two Grade six classes each week to assist with supervision at the site and to prepare follow-up material for return-to-classroom work. Sessions on the site are primarily in the area of Natural Science and the campers are expected to keep their own notes in specially prepared booklets. Recreation, discussions, and sessions specifically designed to correlate the laboratory experience with classroom learning round out the five day program (see Appendix B).

Albion Hills Conservation School opened in 1963 on a year-round basis primarily designed to accommodate senior high school pupils, yet available to other school groups as required. The program at this site is orientated towards

conservation and forest management and the resource staff are supplied by the Metropolitan Toronto and Region Conservation Authority.

One school in Halifax, Nova Scotia is reported to have experimented with school camping at the elementary level as have some of the elementary schools of Regina, Saskatchewan. Both these Provinces used rented facilities and the instructional staff consisted of available school teachers, supervisors and local authorities e.g., zoo keepers, etc. For a sample of Regina's program refer to Appendix B.

British Columbia and Alberta have had a significant number of orally reported school camps. In both these provinces individual school boards have given permission for interested school teachers to be absent from regular classes for three to five days as they lead their classes on educational field trips. But such permission has not been widely used, nor reported and unless reports are published, little, if anything, is heard of them. Such experiences as the ten day Bowron Lakes canoe trip taken by a school in Oliver, British Columbia, the fourteen day bike hike taken by the girls of grade 8 from Lawton and Highlands schools in Edmonton and the boys from grades 7 and 8 in other Edmonton Junior High Schools who spent three days at a wilderness site near Jasper, proved to be both highlights of their year and educational beyond their expectations.

Many of the junior and senior high school camps have been conducted during the period between the conclusion of

classes and the July 1st weekend. Grande Prairie has used this period extensively for wilderness camping for the past eight years. More recently, the Department of Education for the Province of Alberta has approved a Physical Education 30 course which includes in its format a four day camping trip. The program was designed to offer recreational skills with a high carry over value. These skills were taught along with the related subject areas to give the participant a thorough basic knowledge in such activities as riflery, game management, conservation, map and compass work, etc.

While many of the early experiments in this Province appear to be oriented to the junior and senior high school levels, a movement was underway in Calgary to approve an experimental two year program with a class of grade six children from Colonel Walker School. These two camps, held in June of 1964 and 1965, were conducted at the Kiwanis camp west of Calgary. From data gathered during these experiments a comprehensive report (39) was compiled and from this basis school camping has become a permanent feature of the Calgary Public School Boards Grade Six program (refer to Appendix B) with increasing numbers becoming involved each year.

Spring 1969 has seen an unprecedented number of reports in local newspapers commending and reporting various outdoor education activities. These reports are significant in that individual teachers are using, to the best of their ability, the available resources in and near their schools

with such a result that longer trips are being planned with parental and higher authority approval. (6, 86)

In general, the Canadian School Camping Programs tend to follow organizational and administrative examples of other countries such as those of the United States and Australia. While little documented evidence is available as yet this does not indicate a lack of interest or thoroughness for the job to be done, but simply a growing awareness among individual teachers, parents and students which must filter up through the ranks of authority to find its professional acceptance and widespread publicity.

School camping began with an educational purpose and still maintains it although the subject emphasis has changed over the years. Canada is beginning slowly as has been the case in other countries but she is current in her program emphasis -- that of the greater use of the out-of-doors as a natural and abundant classroom for the teaching of the concepts designed by specialists to help the child of this space age meet the needs of his life now and in the future.

The modern era of school camping began some 30 to 70 years after its commencement in Australia and the United States respectively. With the still faster dissemination of knowledge and innovative ideas, Canada may well be at the beginning of her thrust in this area, but time will be her judge.

CHAPTER III

RELATED STUDIES IN OUTDOOR EDUCATION

The following studies reported in chronological order, indicate an historical progression through which Australia and the United States have passed or are passing. Canada can learn much from the trials and errors of both these countries and profit from their students research while endeavoring to capitalize on this old, yet seemingly modern, technique in education.

A philosophical study by Elwell in 1925 attempted to indicate the differences between the Summer Camp with its primary emphasis on amusement and the educational aims and objectives of the "school of the open" (30). Elwell suggested a program that complied with the philosophical thought of the day from his actual experience in a natural setting.

Arnold said, "the public schools have begun to take an interest in the educational possibilities of the summer camp and have established a few experimental camps". (2:2) He presented a questionnaire to camp directors and from their responses he compiled a set of aims and objectives that correlated closely with those of the secondary schools. These aims and objectives he grouped into four categories; moral, physical, mental and social.

Experimental evidence of changes in the character of boys after a summer camp experience was made by Dimock and Hendry. (27) They applied paper and pencil tests, behaviour observation records and a score from observations of behaviour which were marked on a frequency rating scale. From this they concluded that a positive contribution had been made by the one camping experience. With the publishing of their results in 1929 they said:

The next decade will doubtless see schools extending their program through the summer to include the camping experience. Educators will increasingly become aware of the place of the camp in a complete year-long scheme of education. (27:335)

In 1936 Mason (54) used a structured interview technique to obtain data for one of the earliest sociological research studies ever undertaken. He attempted to secure the feelings of the campers toward their environment at camp, the leadership, the camping activities and the social and moral values of camping in general. From this he attempted to point out basic characteristics of youngsters and how these could be satisfied by a camping program. Mason could see no distinction between a recreational camp or an educational one.

. . . the modern educational approach, centering around the element of interest in subject matter, comes very close to being a play approach. The 'educational camp' building its 'curriculum' upon interests becomes a 'recreational camp'. The distinction it seems to me, is an unnecessary and poorly drawn one. (54:8)

Welfare camps of the late 1920's adopted the educational aims and objectives interpreted to them by Sharpe.

(93) He believed that the aims of education could act as a guide and an aid to the wider and fuller interpretation of camping. The term camping was used in the sense that it ". . . is a series of purposeful, related experiences in real life situations, and is therefore an educational process." (93:36)

In 1934 McAuliffe (55) presented a paper outlining his personal experiences as the director of his own camp. Ward (90) outlined the camping movement and the progressive education movement drawing a parallel between the two. He traced the development of summer camping pointing out the social and cultural situation of the time and the need that was being fulfilled by the camping program in the early 1930's. He believed that an exchange of ideas and experimentation would change the "regimented academic camp curricula to a free and unhampered education" (90:51)

More recently, McKnight (57) tried to provide a basis for the need for school camping by determining the cultural, educational, economic, psychological and social trends of the American way of life.

Hammerman (42) analyzed the socio-cultural forces which he felt influenced the development of camping education. He looked upon camping as a necessary "extension of the school facility" (42:178) and concluded that when its aims and objectives were "in keeping with the aims of education," (42:178) then the school camp justified its existence.

During the summers from 1939 - 1942 Moore (59) analyzed the responses she had collected from campers, parents,

school agencies, counsellors and social workers towards the improvement in the mental level, skills and knowledge, and the social habits of the campers. The Seven Cardinal Principles of Education formed the basis for the rating of the responses which gave her study a favourable positive result.

Sharpe (9) used an experimental and a control group to study social aspects of a camping experience. While holding the position of executive director of Life Camps he rated the groups according to observations, interviews, interest inventories, paper and pencil tests, opinion surveys and sociometric tests. He reported that the results were statistically significant and that the experimental group showed an overall superiority over the control group.

In the late 1940's Irwin (47) attempted to determine the educational nature of camping by employing educational aids in the summer camp setting.

Clarke (19) gave a detailed description of the San Diego school camping program. He presented an opinion questionnaire to teachers, pupils and parents in an effort to evaluate and determine those values that might be expected from a school camping experience. The San Diego school camps began on a permanent operational basis in 1946.

In the San Diego approach, an activity curriculum in a group living situation using the natural environment was considered to be a valuable component of education and a responsibility of the community under the leadership of the schools. (93:49)

A sociometric study was carried out by Stack (82) in 1960. Prior to a five day camping experience at Clear Lake,

Michigan, she attempted to define the attitudes of the pupils towards their classmates, teachers, school, the idea of school camping, themselves and their friends. At the conclusion of the camping period the children were tested again in order to measure the changes in attitude. School histories, interviews, case studies and a battery of objective tests were her means of data collection. Stack concluded that positive changes in attitude resulted from the camping experience especially between

- a) the teacher and pupil.
- b) the pupil and school.
- c) the pupil and pupil.
- d) the pupil and camping.

Kranzer (51) had similar conclusions to Stack after conducting a five day camp for sixth grade pupils in 1958. He stated that the positive changes that resulted from the experience might not have occurred had the youngsters remained in the classroom.

By 1958 it is believed that 31,800 children had participated in the Californian school camping scheme.

To determine social relationships and to measure self concept Beker (7) applied a battery of tests to his subjects. Although a positive attitude was evident in the area of self concept and, to some extent in their social relationships, he warned that the exact nature of the experience and the depth of its influence was not as easily determined.

Rogers (72) gathered all the available information about outdoor education from 1925 and categorized the data

into statements of aims and objectives, principles and definitions of outdoor education. He then presented his composite data, which he found to be consistent with the judgements of nine experts, in the form of 21 general objectives and 49 guiding principles.

It is interesting to note that it wasn't until the early 1960's that text books specifically for school camping appeared on the market.

Wiener (93) presented his Rationale for Outdoor Education in 1965. This study looks closely at the development of outdoor education as interpreted by two of its pioneers namely L. B. Sharpe and J. W. Smith. The careers of these two men, their contributions to the field and the progress made as a result of their work, have been written for posterity.

As a result of his study Wiener concluded that there were four natural divisions in the development of the concept of outdoor education. The period 1880 - 1935 was the time of organized summer camping. This period conveyed the concept of camping or an outing. From 1935 - 1945 school camping or camping education was in vogue. 1945 - 1955 was the time of the school camping or outdoor education. These terms were synonymous and appeared as the current concepts respectively. From 1955 - 1964 the movement was known as outdoor education and this concept or the concept of resident outdoor education is the idea used to-day. Wiener uses these dates only as representative approximations.

In 1966 Gibson (39) reported the findings of the Calgary School Boards experimental Grade Six camps with regard to attitudinal changes to aspects of the program and sociability standings within the class. Both types of tests were administered before and after the experience and the results are worthy of note. (39:215)

1. . . . It is concluded that the attitudes of students toward the areas measured by the test instrument improved greatly by spending one week at outdoor school.
2. Reality shock was evident, particularly with non-campers, but cannot be considered a major factor in that students who had camped before scored as negatively to the scales as those who had never camped before.
3. The students after camp who had the strongest interest in outdoor education activities proved to be the girls in both camps.
4. Since 52.1 percent of the students following the camp experience registered a strong interest of 4 or 5 for those areas measured by the attitude scales, it is concluded that the interest level was high for both groups even though little change may have been registered by some students.
5. Outstanding improvement in 1965 was registered in all scales with the exception of Scale No. I - Trees and Plants, and Scale No. IV - Topography and Geography. From this it is concluded that there were factors in the second camp, which indicated an improvement in organization and approach to the presentation of the material.

Sociometric Results (39:216-218)

1. When the factors as outlined by Sherif and Sherif (pp. 545-570) are not strong in the group setting, the social distance between students in a group increases rather than decreases. Instead of developing in group bonds between members of the cabin group the students made choices for others of high constellation in camp. However, if students

are placed in cabin groups according to social rank (those of high constellation together, and those of low constellation together) a marked improvement in cabin group cohesion results.

2. Homogeneous grouping of students in groups according to social rank provides for a much greater opportunity for individuals of lower rank to win self esteem, within the limits of a camp setting that de-emphasizes competition between groups.
3. Heterogeneous grouping allows those who were the most popular to assume leadership and subsequently those of lower rank never have an opportunity to lead. Conversely, homogeneous grouping according to social rank provides an opportunity for students of low rank to assume leadership positions. In this setting students of the high constellation group must compete more vigorously for leadership positions. Consequently more conflict results in the high ranking group.
4. Cross-sex choices increased substantiating Stack's study (4), who found that after camp a greater choice was made by campers for the opposite sex. This factor can be conditioned as evidenced in contrasting the two camps. When co-educational activities were sponsored, the cross-sex choices increased, when these were limited, the cross-sex choices were reduced.
5. As a child rises in social rank he drops those students who were friends below him and chooses friends from his own level or above. In the first camp leaders extended choices to other cabin group leaders.
6. When students are placed together by random selection, isolates and neglectees increase, but when students are placed according to social rank into homogeneous groups, the isolates and neglectees are reduced.
7. Students of low social rank, according to the data, have as high scores on social development scales as the people of high social rank. In competition, people of low social rank have a greater awareness of the expectations of society than those of high rank.

8. Stack (4), Whitaker (5:152-160) and Davis (6:305-313) in their studies have concluded that an increase in "numbers chosen" indicates an improved state in the child's social growth. The experimenter of this study concludes that only students dropping in social rank or who are new to a group make a wide variety of choices. This is done because of a lack of security in their association with their peers. Therefore, those who limit their choices to a smaller group are those who feel more secure with their peers.

(Note, for information about the references included in this quote see (39:222-229).

Therefore Outdoor Education is . . .

1. Capitalizing on educational opportunity. Industrialization has created a number of gaps in the experiences of the young and these, in a relevant way, must be filled. As an example, many in the population are consumers and with vested democratic power pass laws regulating various aspects of the economy, especially in the area of primary production. Yet to do this wisely, each voting member of society needs to understand the causes, effects and principles involved before each ratification. The Department of Education for Alberta (23:4) realizes this for it states as an educational objective that:

"Each child should increase his capabilities to: . . .
Function as a wise purchaser and consumer."

Many practical activities in the out-of-doors can be organized to help youngsters better understand the problems associated with productivity, marketing, etc. In fact it is opportunities such as these which can provide more direct

real learning experiences coupled with the popularity of outdoor activities that has caused the establishment and progress of the school camping movement.

Sociologists and psychologists accept the fact that group interaction is essential for normal growth and development. This experience should be as wide as possible if the child is to make valid value judgements as he works his way through life. In a resident outdoor school situation he is exposed to a twenty-four hour day routine with his peers. In this situation he may find that his assessment of school friends differ from those he made on the formal playground (39:179-190) and (80:420). The experience gives him direct, concrete evidence from which to evaluate situations that presently confront him and to form the basis for his generalizations in the future.

The White House Conference of 1933 (91:38) issued the following statement in its report:

The camping movement has an unsurpassed educational opportunity. The intimate nature of the camp community, the twenty-four hour a day contact with children, the rich and stimulating surroundings, all make possible educational achievement of a high order.

This report is referring to a resident experience with its concomitant communal interaction which can assist in the acceleration of normal growth and development in a positive way. Surely this is seen as an educational experience involving more than the conceptualization of curricula. This is an extension of the classroom beyond the traditional four walls and into the natural and ecologically basic world.

It is into this world that the student must graduate. By planning for those activities that can more effectively be taught in the outdoor setting, the teacher is placing certain problems in context and often the setting is as significant to the problem as the problem is itself. Learning via direct experiences which begin with concrete activities and are followed by generalizations, not only stimulates interest, but improves the quality of the experience.

Brimm (13:48) explains:

There seems to be a feeling among some of our leading educators that certain educational experiences can be presented by the camp in a manner much superior to the methods used in the classroom.

He cites Bode (10:12) who

. . . points out that in the organized camp, experiences may be lived instead of being learned from books. In this respect, he claims, they are providing something which is sadly lacking in our educational programs.

With abundant resources in sufficient quantity and at minimal cost, the teacher can capitalize upon the curiosity of his charges and the environment as opportunities for exploration and research present themselves. In so doing he not only effects an increase in their power of observation but these new understandings reduce the fear associated with the unknown and thus he develops within the youngsters a feeling of familiarity in the out-of-doors and so eventually to the child's mastery of himself in this environment.

Bruner's hypothesis (16:33) "that any subject can be taught effectively in some intellectually honest form . . .

to any child at any stage of development" is as true for formal education as it is for outdoor education or in fact for any form of education.

A few of the comments made by campers from surveys conducted at the resident outdoor school of Myuna Bay, serve to illustrate some of the experiences and attitudes to which the youngsters have been exposed. These campers ranged in age from ten to twelve years and came from both city and country areas. After the sixth day of a ten day camp the children were asked to list those things that they had attempted or experienced for the first time. The responses listed below are some of the many given and printed in their bi-weekly magazine and reported by Fox (36).

I have now seen the sea.
 I am now not afraid of the bush at night.
 I watched a starfish open an oyster.
 This is the first time that I have caught
 a lizard and let it go.
 I have written a real letter.
 I have caught my first fish.
 I have learnt to swim.
 I have never enjoyed so much freedom before.
 This is the first time that I have really
 seen the need for discipline.
 I have never felt the equal of my mates
 before now.
 I have never made friends with my enemies
 so quickly.
 I didn't think I could walk so far.
 I now know how destructive a fire can be.

But perhaps one camper's reply best purports the need when he says (36):

At camp I get a chance to do things that might never occur in my normal life. Things such as learning to live with other people and finding out about nature - things at school, that we can only hear about, but at camp we get a chance to see and feel.

2. Curriculum enrichment. Much has been written about the involvement of the senses in facilitating learning and their significance to the retention of knowledge. (As an example, see comments listed on the previous page.) Both Bruner (16) and Piaget (64) have emphasized that the more senses that can be involved the better for the learner. Northway (65:18-19) applied this idea to the outdoor situation when she wrote:

It is looking, hearing, smelling, touching, feeling and putting these actual experiences together in some outward form of expression such as conversation, a picture, a story, a diagram, a report, a collection or display, which reflect truthfully ones' own actual experience in the way one is best able to express it, not in the conventional way one was told to do it.

Outdoor Education should be considered an integral part of the learning environment as it serves to illuminate regular school studies rather than to duplicate them and in so doing, offers the youngsters reinforcement of their classroom experiences. At the same time it helps to develop a continuing interest in learning by giving them abundant materials and stimuli with which to work resulting in improved verbalization and a wider range of topics for variety in form and essence of communication.

The goals of Conservation Education (81:81) illustrate the significance of integrated learning:

- a) Knowledge and understanding of the problems of conservation from the standpoint of a local area, the nation and the world. What are the resources? How are they used and misused? What is their present status? The probable future demands? What are the resources that are

of economic, scenic, scientific, historic and recreational value?

- b) The development of attitudes and appreciations. To help develop a personal responsibility toward conservation.
- c) The development of desirable practices and skills related to the use of outdoor resources, e.g.,
 - refraining from picking wildflowers.
 - leaving an area better than it was when you found it.
 - putting campfires out, etc.

Outdoor education affords the opportunity to understand various aspects of the natural world that are not limited by another's ability to express them in one medium alone -- for example a sunset as portrayed on a canvas by an artist or described in a paragraph by a writer.

"Creativity is not what is done, but how . . ." (63)

How much open space is there and what are we doing with it? (28) In Edmonton alone there are parks with signs such as "Keep off the grass", "No active games allowed", etc., and yet what are the youngsters needs at this stage of their development and what are they being taught in their physical education lessons? Are school activities so far removed from reality? If this is so, then the objectives of education for the province of Alberta are contradictory and superfluous (23:4-5).

3. Overcoming cultural deprivation and economic deficiencies. Modern living conditions have developed to the point where, for economic gain, efficiency of service and satisfactory accommodation, multi-family dwellings are replacing the single family dwelling with its private garden

area. The area, per capita, of free space is diminishing while an increase in the usage of available natural areas can be seen, e.g., in National and Provincial park figures, the sales of sporting equipment, the enrollment in learn to ski or swim classes, etc., and rapidly rising memberships in outdoor activity groups and clubs. A portion of this increase is attributable to an increase in the population, but a portion can also be traced to an emotional need.

Smith (81:41) says:

Man needs identification with something larger than himself. . . . "Material richness is our lot - then why are men still afraid? They search for enduring dependability and stability which can be found by "getting away from it all" and "going out into the country". . . . It is from the permanence and changelessness of mountains, forests, lakes and open spaces that man can appreciate the steadfastness that is missing from his ever changing, transient way of life.

Poverty is believed to be the most retarding force to educational equality to-day. The term poverty is used here to indicate those people living on or below the subsistence line of \$3000 per year as set by the President's Council of Economic Advisers. But it is not so much the lack of finance that should be of concern as the implications of such a lack or as Humphrey (45:136) states, "We must not concentrate so hard on poverty of the pocket-book that we neglect intellectual impoverishment", though all too often the two are hand in hand.

". . . a child is probably farther away from his maturation ceiling (for his age group) as a result of this

experiential poverty" (32:360) as shown by his measure of success on standardized intelligence tests and standardized skill tests. For example, the use of home artifacts, toys, furniture, utensils, etc., is limited for the poor child, and hence his visual sense of shape and colour, his tactile manipulation and so on will be limited. Verbal orientation may be poor and so auditory discrimination and feedback skills will be non-existent or poor. With this there is also a deficiency in memory development and time judgement. Adults and peers form the basis of our socialization, but when they have little positive information to offer, the trend tends to be reinforced through each generation so that their motivation toward education remains low.

Deutsch (32:366) suggests current data indicates

. . . . that class differences in perceptual abilities in general environmental orientation decreases with chronological age, whereas language differences tend to increase. These might tentatively be interpreted to mean that perceptual development occurs first and that language growth and its importance in problem solving comes later.

To overcome the financial and cultural disparities and to capitalize on the educational possibilities of the outdoor setting Hannon (43) gives voice to the dreams of many when he states:

Proponents of out-door education hope that camp schools will become a permanent part of the nation's education system on a year round basis in order that every child, rich or poor, will have the benefit of camping experience and all that goes with it. They contend that something more than book learning is needed in the schools of today and that out-door education

is a way of enriching the educational offerings:

Within the realm of one aspect of education the following excerpts will show the inequalities of the experience with natural phenomena for the poverty stricken child.

rough as he (the child of poverty) is, if anyone doubt that this child of common clay have in him the beauty, of love for the ideal of which his life has no embodiment, let him put the matter to the test I have seen an armful of daisies keep the peace of a block better than a policeman and his club. (32:358)

Has a yard of turf been laid and a vine been coaxed to grow within their reach, they are banished and barred out from it as from a heaven that is not for such as they. (69:137)

A child does not have to come from a poverty stricken family to be culturally deprived. Educational standards are implemented and assessed at the middle class level of society and many youngsters fail to share the experiences of advantaged peers even though they may be classed as economically above the subsistence level for other variables.

From a public school board in downtown Brooklyn, it was reported that "out of 48 boys, 20 had never seen the Brooklyn Bridge that was scarcely five minutes' walk away. . . ." (69:137)

After working with youngsters from a small town who were attending their first school camp Porter (66) wrote:

It isn't only the tenement children of big cities who miss these meaningful experiences. Battle Creek, Michigan, is a country town when compared to New York City or Chicago, yet in a recent checkup twenty-eight out of

thirty-one children from Battle Creek stated that never before had they gone for a walk in the woods.

4. Pursuance of adventure

Adventure or non competitive activities provide a challenge, for through the element of danger, the character, personality and social outlook of the student is allowed room for development, which will help make him or her a better and more useful citizen of tomorrow. (84:1-2)

Every student is concerned, to varying degrees, about his self growth -- physically, mentally, socially, emotionally and spiritually - his total self, and ideally so, are the educators of today. But often the child's education has evolved as a sequence of unrelated experiences that, it is hoped, he can integrate as his life unfolds.

Youngsters are adventurous. The urge to be adventurous, to explore and discover is inborn. Youth constantly seeks new experiences. Wholesome outlets for this desire are becoming fewer as our society becomes more complicated. The desire to reach optimum efficiency has led to apartment dwelling close to the place of employment which is usually attained in some form of mechanical conveyance. Hence, to a great extent, suburban populations have grown away from the natural environment and lack the initiative and skill to learn from it.

Children will learn through the experience of expeditions, both mentally and physically, to rely upon their own judgement and to gain a greater appreciation of responsibility. As well, a sense of physical well being will be promoted in each child and a feeling of individual worth.

Such experiences provide a definite link between physical education classes and other classroom subjects while providing the student with new and varied skills which offer a wide choice of leisure time activities for his post-school life.

5. Extending the teacher. Research clearly indicates that each person is an individual with unique abilities and potentialities. Each child learns at a different rate, in a different way, with different degrees of interest. Yet all children have a common goal -- to be better than they are now. Teachers personally are committed to some goal, and in addition have accepted the responsibility of helping their charges to achieve theirs.

Because of the infinite potential available to a class in an outdoor setting a teacher must improve his knowledge of the environment and satisfactorily limit his students experiences to those befitting their age, and their ability, while capitalizing on the available resources.

This not only requires better personal preparation, but also better planning of classroom activities.

Science and conservation experiences outdoors should be related to the purposes of education and the course content of the classroom. Outdoor experiences should be preceded by pre-class preparation and followed by evaluation and discussion in the classroom. (81:83)

The out-of-doors merely provides the setting conducive to learning by exploration but it is the creative teacher who can use it to best advantage.

6. Having school boards assume the responsibility for organizing and administering resident outdoor schools. The philosophy, aims and objectives of each existing camp varies with the organization to which it belongs. Hence the camper population need not approximate a normal one in the statistical sense. Summer camps, for example, are owned and/or operated by agencies, specific religious groups, organizations and private individuals or companies. Some cater to the poorer income group; others to the highest income group and still others to a particular need of a group, e.g., physically handicapped individuals or music groups, yet each contributes in some way to the betterment of individuals.

Sharman (79) could foresee a camping future that did not meet the ideals nor have the scope that the term outdoor education implied when he wrote:

The public school is the agency that should assume the major part of the burden for organizing and operating camps. The objectives of camping are primarily educational and recreational and, therefore, fall appropriately in the sphere of the responsibilities of the school boards. It is certain that the school must accept promptly this new responsibility. Otherwise society will create some new public agency to handle the problem of camping that would probably not be as well qualified as the school. Many critics of the public schools believe that educators and school boards have been too slow to recognize changed social conditions and to adapt the school program to meet the new demands being made on it.

Wrenn and Harley (99:81) agreed with this:

To the educators of the future a major mystery of the development of their profession in the first half of the twentieth century will surely be the slowness with which camping was adapted as a functional part of the school system.

Western Canada has a recent history when compared to some Eastern regions and foreign countries. Consequently the school facilities tend to be more modern and innovations adopted here are largely the result of experimental use in the east or in the older established countries, although this sequence of events is now changing. As this is a younger developing area, it would be remiss of current and future educators to dismiss the evidence produced by these more experienced regions. For example, the low income areas are often the oldest established areas and hence are in need of extensive maintenance or are obsolete. Increased immigration and size of families has increased the enrollment numbers and social pressure for a higher education is keeping more youngsters in school for a longer period of time. Add this to numbers now qualifying for a university education and the situation with regard to new facilities can be seen as 'desperate' by the teacher and as 'necessary' by the school board member who is further removed from the situation.

As well, the curriculum calls for special subject facility areas and adaptability of facilities to meet the needs of the community generally. Yet statistics reveal that all school boards are behind in construction and this is linearly correlated with the financial statement of school boards. Without adequate finances, estimated on the tax base of the area, a school board finds it difficult to borrow from the government or on the open market to:

a) finance needed facilities.

- b) offer salaries which will encourage better teachers on a permanent basis.
- c) allow for adequate supplies of teaching materials, textbooks, etc.

Summary

Outdoor education is truly an interdisciplinary field, cutting across many curricular areas. It possesses no subject matter of its own, its major contributions are ways of learning. (81:41)

Unless the senses are educated and provision is made for real opportunities for integrating what has been learned with life, the basis for future judgement and speculation will be impeded. The playground, museum, dockyard or park near the school will offer many new opportunities for a child, but areas not too distant from the school will often be of more benefit, educationally, to the total child.

Zahn (100) summarizes these ideas and allays many of the fears voiced by those inquiring into the implementation of outdoor education when he states:

It seems, therefore, correct to accept outdoor education in its present prospective as an integral part of total education, as no longer haphazard and almost whimsical, as having no real relation to status interests either within or without education per se, but rather as a means of extending interests, increasing scope, providing important means of developing creative power, in fact, aiding in meeting more effectively the total objectives of the educative process.

CHAPTER IV

THE CONCEPTUAL BASIS FOR OUTDOOR ACTIVITIES

Because of the nature of this study, it is important to define the foundation upon which the following chapter is based. From teachers in various school divisions comes the complaint that outdoor education can be used as an educational medium for certain subject areas only. Evidence of this is available in that some school boards have refused permission to conduct such outdoor learning experiences when approached from the standpoint of, as an example, physical education. It would appear that some school boards are more concerned with the approach to particular subject matter and the relative cost of this type of experience to the funds spent on the same course for special facilities, text books, etc. during the year. Hence, at the present time, a teacher approaching a school board needs to know the financial cost of the courses offered at the Grade VI level in order to substantiate a need for a less costly course and so have the outdoor experience approved.

This study attempts to demonstrate the interdisciplinary approach to outdoor education. No subject is a complete entity unto itself and hence no program can contain purely one subject area, although a particular subject emphasis is advantageous in some situations.

As outdoor education is a method of learning with program implications in all subject areas at the Grade VI level, it is felt that each activity can be justified by the stated aims and objectives of the Department of Education for that grade. (Please see pages 8 - 10 of this study.) These are supplemented by the concepts to be learned in each subject area listed in the officially approved textbooks and published in (23).

Hence the aims, objectives and concepts are quoted hereafter. Each subject is listed in alphabetical order.

In some areas it would appear that concepts irrelevant to the study have been included. These concepts are important to the students as a basis for other future learnings and are included because their prior knowledge is important to the planning of the experience or during the experience. At times the concept appears isolated and meaningless, yet in combination with others can readily be recognized as worthy of inclusion. As an example, in arithmetic, concept 90 (p.63) of this study holds importance for science concept 11 (p. 84). This relationship is acknowledged, as an example, when temperature readings are taken in both centigrade and fahrenheit measures.

ARITHMETIC (23:19-20)

General Objectives

1. Arithmetic, in common with the other subjects of the elementary school, has the basic purpose of contributing to the overall growth and development of the child into a mature, well rounded and useful citizen. Of equal importance is the aim

of providing pupils with the background they will require for the study of mathematics in the later years of their school life.

2. The arithmetic curriculum is designed to help the child to grow in his understanding of a body of mathematical knowledge, organized systematically and including concepts and relationships.
3. The arithmetic curriculum is designed to help the child to master skills in the manipulation of quantitative symbols through an understanding of concepts and relationships appropriate to the individual's capacity.
4. The arithmetic curriculum in the elementary school is designed to help the child to use the knowledge and skill acquired in developing a systematic approach to the solution of problems.
5. The arithmetic curriculum should result in the acquisition of the number concept, which includes the awareness of the simplicity, symmetry, beauty and power of number systems, and an appreciation of the origins and history of our own and other numeration systems.
6. The arithmetic curriculum should provide opportunities for the child to discover relationships, and form these to develop generalizations which integrate mathematical ideas in a meaningful and logical sequence.

Specific Objectives

1. Mastery of the basic idea of a number and its representation by a written symbol (numeral).
2. Mastery of the basic number facts, employing the four fundamental operations.
3. Comprehension of the decimal number system:
 - (a) Understanding of place value in the numeration of natural numbers.
 - (b) Reading of numerals larger than hundreds.
 - (c) The role of zero in number systems.

4. Comprehension of the laws that relate to numbers.
5. Skill and information necessary for using common measures, including the mathematical concepts of measurement.
6. An understanding of the fraction as a method of expressing relationships between integers, and an understanding of the relationships between the various ways of expressing a fraction.
7. An ability to estimate a reasonable answer in quantitative situations.
8. Interpretation and representation of statistical information through the use of graphs and tables.
9. Rapid mental calculation.
10. Mastery of sound and systematic procedures for problem-solving including order and neatness in presentation of written solutions.
11. Mastery of mathematical vocabulary appropriate to the grade and consistent with vocabulary used at later grade levels.
12. An understanding of the meaning and application of ratio in the solution of problems.
13. Development of the habit of checking computations by simple methods to avoid careless errors.

Conceptual Learnings in Arithmetic (as stated by Hartung, et al (44))

1. The pupil develops an awareness of three-dimensional geometric shapes that are around him. He learns how perspective is used in representing these shapes in drawings. (44:22)
2. The pupil learns about the distinguishing features of prisms, cylinders, pyramids, cones and the sphere. (44:26)

3. The pupil learns how to recognize and measure the important dimensions of various geometric shapes. (44:29)
4. The pupil learns about the measurement of volume. He learns what a cubic inch is and how to find the volume of various shapes by counting the number of cubic inches they contain. (44:31)
5. The pupil sees that various words can be used to describe the dimensions of geometric shapes. (44:35)
6. The pupil reviews rounding off numbers. He reviews the principles that a divisor and a dividend can be divided by the same number without affecting the quotient. (44:38)
7. The pupil reviews his knowledge of division. His ability to divide is refined by techniques of estimating partial quotients. (44:40)
8. This lesson reviews the multiple-step problem. The pupil learns how to write and solve one equation that fits the problem situation. (44:47)
9. The pupil learns that when several numbers are to be added or multiplied, he must group by twos to add or multiply, and he may do this grouping in a number of ways. (44:51)
10. The pupil reviews the method of expressing a rate by using two numerals to make a ratio. He reviews how to read a ratio when it expresses a rate. He also reviews the fact that the same rate may be expressed by different ratios. (44:52)
11. The pupil reviews how to use a ratio to compare one quantity with another. He reviews the meaning of each term in the ratio and how to write the terms together as one symbol. (44:56)
12. The pupil reviews proper fractions, improper fractions and mixed numbers and how to read and write fraction numerals. He reviews the fact that different pairs of numerals may be used to represent the same fraction and that mixed numerals and improper fractions may be equal. (44:59)

13. The pupil learns to distinguish among situations involving fractions, rates and comparisons. (44:62)
14. The pupil solves problems of various types, some of which involve using information or answers from previous problems. (44:63)
15. The pupil learns that he can use other letters of the alphabet besides n . to hold a place for the answer in an equation. He learns that in an equation for a multiple step problem he can use as many different letters of the alphabet as he needs to hold places for numerals that are to be found. (44:65)
16. The pupil reviews how to compute to replace a ratio or fraction numeral with an equal ratio or fraction numeral. He also reviews reduction of these pairs of numerals to lowest terms. (44:68)
17. The pupil learns to make judgements in the use of remainders in division problems. (44:77)
18. The pupil reviews finding common denominators. He also reviews the meaning of the expression lowest common denominator. (44:80)
19. The pupil learns how division can be used to replace an improper fraction numeral with a mixed numeral or a numeral for a whole number. (44:83)
20. The pupil uses equations to solve various types of verbal problems. (44:86)
21. The pupil reviews the method of adding proper fractions. (44:87)
22. Pupils review the addition of numbers expressed as mixed numerals and fraction numerals. (44:92)
23. The pupils solve problems that require the addition of numbers expressed as fraction numerals and mixed numerals. (44:96)
24. The pupil reviews how to subtract numbers expressed as proper fraction numerals. (44:99)

25. The pupil learns to subtract numbers expressed as mixed numerals. (44:102)
26. The pupil solves problems that require the subtraction of numbers expressed as fraction numerals and mixed numerals. (44:105)
27. The pupil solves a variety of verbal problems, some of which require him to get information from diagrams. (44:107)
28. The pupil finds out that there are mathematical sentences other than the equation. He learns how to make statements from the sentences and how to find solution sets for the sentences. (44:111)
29. The pupil learns ways of regrouping when more than one operation is indicated. He learns that multiplication and division can be indicated in other ways besides using the multiplication and the division signs. (44:114)
30. The pupil learns to use the distributive law. (44:117)
31. The pupil learns how to divide by the short-division method. (44:118)
32. The pupil applies his knowledge of rate to problem solving. (44:120)
33. The pupil reviews how to use ratios to solve problems that involve comparisons. (44:124)
34. The pupil reviews solving problems in which the result of a comparison of two groups of objects is expressed in terms of "times as many as." (44:127)
35. The pupil learns the distinction between comparison of a part of a group with the whole group and the comparison of two groups. He also becomes aware of various expressions of comparison. (44:130)
36. The pupil learns that per cent is a way of expressing a comparison by a ratio that has 100 as the second term. Per cents greater than 100% are included. (44:131)

37. The pupil learns to use per cents to express comparisons. (44:134)
38. The pupil learns to recognize and use expressions about per cent. (44:137)
39. The pupil discovers short cuts in multiplying and dividing numbers whose numerals end in one or more zeros. (44:139)
40. The pupil solves problems using ratio equations and short cuts for multiples of 10. (44:141)
41. The pupil discovers different ways to write and solve equations involving more than one operation. (44:143)
42. The pupil learns to apply a test (called the "ratio test") to determine the equality of ratios. (44:144)
43. The pupil learns how to use the ratio test to solve equations of ratios. (44:146)
44. The pupil learns how to apply the ratio test when he solves problems. (44:148)
45. The pupil generalizes further the idea of perimeter and area. He learns to recognize a parallelogram. (44:152)
46. The pupil learns that a parallelogram that is not a rectangle has the same area as a rectangle if both have the same number of units in base and altitude. (44:153)
47. The pupil learns to compute the area of a parallelogram. (44:155)
48. The pupil reviews finding areas measured in square feet and square yards. He also changes units of square measure. (44:158)
49. The pupil learns that each number may have many names, and that they may be used as names for a point on a number line. (44:164)
50. The pupil learns to read and write decimal fraction numerals. (44:168)
51. The pupil learns the principles of regrouping needed in computation involving decimal fraction numerals. (44:170)

52. The pupil learns that decimal fraction numerals can be used as names for points on a number line. (44:172)
53. The pupil learns how to add and subtract numbers represented by decimal fraction numerals. (44:173)
54. The pupil learns to solve problems that require addition and subtraction of numbers expressed as decimal fraction numerals. (44:176)
55. The pupil learns that he can use fraction numerals and mixed numerals as terms of ratios. (44:178)
56. The pupil is introduced to the multiplication of fractions by using the number line. (44:180)
57. The pupil learns how to multiply numbers expressed by mixed numerals and proper fraction numerals. (44:182)
58. The pupil solves problems that require multiplication of proper fractions and mixed numbers. (44:186)
59. The pupil is introduced to the concept of the reciprocal of a number. The pupil's skill in multiplying numbers expressed by proper fraction numerals and mixed numerals is tested. (44:189)
60. The pupil learns that division of whole numbers, mixed numbers, and fractions may be indicated in different ways. (44:190)
61. The pupil learns to divide numbers expressed by fraction numerals. (44:192)
62. The pupil learns to solve problems that involve division of fractions. (44:196)
63. The pupil learns that "cancellation" may be used as a short cut in multiplication of fractions. (44:197)
64. The pupil learns a convenient way to multiply large numbers when one is a whole number and the other number is expressed as a mixed numeral. (44:198)

65. The pupil learns a convenient short cut to use in solving ratio equations that have 1 in the second term of one ratio. (44:202)
66. The pupil learns to solve comparison problems in which fraction numerals are used in the terms of ratio equations. (44:203)
67. The pupil learns to make equations for sentences that involve the use of fractions to compare one number with another. (44:206)
68. The pupil uses decimal fraction numerals to express precision in measurement. (44:208)
69. The pupil learns to multiply numbers expressed by decimal fraction numerals. (44:210)
70. The pupil solves problems that require the multiplication of members expressed by decimal fraction numerals. (44:213)
71. The pupil extends his knowledge of multiplying numbers expressed by powers of ten. (44:215)
72. This lesson extends the idea that both dividend and divisor can be divided by the same number without affecting the quotient. The pupil studies its application to numbers expressed by decimal fraction numerals. (44:216)
73. The pupil learns how to divide numbers that are expressed by decimal fraction numerals. (44:217)
74. The pupil learns that the number of places in the quotient can be established by annexing zeros to the dividend. He also learns what to do with remainders. (44:221)
75. The pupil solves problems that require division of numbers expressed by decimal fraction numerals. (44:222)
76. The pupil solves comparison problems by means of equations of ratios that involve the use of decimal fraction numerals. (44:226)

77. The pupil learns to distinguish among and work with abstract statements for comparisons involving decimal fraction numerals. (44:229)
78. The pupil learns to express common fraction numerals as decimal fraction numerals and decimal fraction numerals as common fraction numerals.
79. The pupil learns to replace ratios that express percents by equal ratios that involve decimal fraction numerals or common fraction numerals. (44:233)
80. The pupil learns to write equations of ratios that involve decimal fraction numerals or common fraction numerals for percent problems. (44:234)
81. The pupil reviews the properties of the rectangular prism and learns to find the area of its faces. (44:236)
82. The pupil learns to compute the volume of a rectangular prism. (44:237)
83. The pupil extends his knowledge of volume to include the cubic foot and the cubic yard. He learns to reduce units of cubic measure. (44:241)
84. The pupil solves problems involving square and cubic measures. (44:244)
85. The pupil learns how to solve problems comparing two groups of objects by using addition or subtraction. (44:246)
86. The pupil learns how to compute using mixed measures. (44:249)
87. The pupil extends his concept of number to include positive and negative numbers.
88. The pupil learns to use number pairs, representing a rate, in a graph. (44:255)
89. The pupil learns how to make and use statistical tables and graphs. (44:257)
90. The pupil is introduced to the metric system and its relation to the English system of measurement. (44:260)

ART (23:56-57)

General Objectives

Through the provision of art experience and through the use of a wide range of media and materials, to foster and encourage the personal development and growth in sensitivity, in appreciation, in understanding and in the productive abilities of each pupil in the elementary school program.

Specific Objectives

1. To assist each child to grow in sensitivity and perception:
 - (1) to see in order that he may become visually sensitive to the nature of line, shape, form, tone, color and the organic structures which characterize design in nature and in man-made objects.
 - (2) to touch so that he may develop tactile awareness of texture, form and shape.
 - (3) to think, through questioning, analyzing and discussing such similarities, differences and harmonies as he finds in nature, in his own work and in the work of others, and in so doing, to establish self-standards of workmanship and appreciation.
 - (4) to feel by responding emotionally to his own involvements with art, as well as to the experiences of others, as expressed in line, form and color, and in the language of symbols.
 - (5) to dream, by capitalizing on the capacity for wonder; to develop the power to improvise, to extend, to pursue, and to seek answers through inquiry and experimentation.
 - (6) to make, by developing the power to initiate creative activity, and from the selection of an idea, to the choice of materials, through to the attainment of a finished product, learn the satisfaction that comes from making something of one's own -- a personal statement.
2. To provide each child with a comprehensive set of experiences that will develop his visual, manipulative, imaginative, evaluative and aesthetic powers.
3. To help each child learn to explore the possibilities of a variety of art media and

of basic materials in two-dimensional and three-dimensional form.

4. To assist each child to acquire basic artistic skills and techniques and to improve on those skills through expanding, enriching experiences or through progressively greater concentration or by a change in emphasis.
5. To get each child to understand and use the common vocabulary of expression and interpretation, the language of art, through meaningful experiences and through self-study or directed study and research.
6. To correlate art with other aspects of the curriculum in order to make the art program more functional and to illustrate how art permeates the whole field of learning.
7. To ensure the opportunity for successful and enjoyable experiences and individuality and pride in achievement on the part of every student.
8. To provide valuable group experiences through joint cooperative projects.
9. To have children discuss their own and their classmates art experiences and products and to learn how to display their completed work effectively.

HANDWRITING (23:51)

Objectives

Instruction in handwriting is successful to the degree that it develops:

1. Legible writing.
2. Ease of writing.
3. Adequate speed.
4. A pleasing appearance through neatness and the functional arrangement of written material on the page.
5. The desire to produce good handwriting as a result of the knowledge of its importance.
6. The ability to diagnose and correct specific faults.

HEALTH (23:41)

General Aims and Objectives

1. Body Structure and Function
To develop an understanding of body structure and function as a basis for healthful living.
2. Food and Nutrition
To develop the acquisition of good food habits, understandings, attitudes and appreciation as they affect the child's health.
3. Prevention and Control of Sickness and Disease
To develop in the child attitudes, appreciations, understandings and worthwhile practices which contribute to the protection and promotion of his own health and the health of the community.
4. and 5. First Aid and Safety
To help children recognize situations involving hazards and to develop habits of carefulness and obedience to safety rules at home, on the streets, in the school or at play, and to help prepare children to face situations involving sudden illness or accidents.
6. Cleanliness and Personal Appearance
To develop those attitudes and appreciations which encourage continued improvement in acceptable appearance, cleanliness and correct posture.
7. Personal Development and Mental Health
To help the child acquire a sense of belonging and adequacy so that he can adjust to the demands of daily life and establish satisfactory relationships with others.

Conceptual Learnings in Health

The following are cited by Irwin et al,

Improving Yourself (48:7-8)

The help of family and friends is needed to develop a well rounded personality.

Certain traits are inherited, others acquired through environment; habits and attitudes are acquired through association with others.

Respect for yourself and others shows social maturity.

Good manners are good habits.

Taking care of social obligations is evidence of social maturity.

Clothing and appearance suggest the type of person one is.

The ability to face a problem is the first step towards solving it.

Mental and emotional growth should accompany physical growth.

Mature persons are dependable and responsible and persist until a task is completed successfully.

The Safe Way (48:18-19)

Vacation planning should include provisions for safety.

Emotions play their role in causing accidents.

Drowning is the cause of death for many people.

Learning where to walk and ride in the streets is of utmost importance.

Nearly one-third of all accidental deaths in Canada each year happen at home.

Improper use of tools can cause serious personal injury.

Burns may be caused by matches, chemicals, explosions, hot foods and electrical supplies.

School accidents are mainly due to carelessness and thoughtlessness.

Follow the rules implicitly during fire drills, when taking showers, when using the gymnasium and shop equipment, and when going to and from school.

Learn where to seek shelter during an electric storm.

The sun can be harmful as well as healthful.

Some foods spoil quickly and should be avoided when travelling.

Ivy, sumac and oak poisoning, insect bites, cuts and infections need immediate treatment or medical attention.

Only a trained person should administer first aid.

How you Learn (48:26)

Learning is the continuous process of gaining skill and knowledge.

Animals and humans can learn through conditioning.

Rewards promote learning.

Man learns through reasoning.

Heredity and environment affect what and how one learns.

Maturation is a factor in learning.

Motivation influences learning.

It is difficult to measure intelligence.

Experience is a great teacher.

Good study habits improve the quality of learning.

You and Others (48:29)

Physical environment influences growth.

Social environment determines attitudes and ways of life.

Different societies encourage different attitudes.

First impressions are based on such factors as appearance, manners, and speech.

Appearance and mannerisms reveal something about attitudes.

Lack of understanding of differences is a cause of prejudice.

Groups are held together by establishing goals and plans to attain these goals.

Democracy is important to the success of a group.

Individuality and competition can exist within a healthy group.

Planning can make leisure time more interesting.

The Canadian Way (48:41)

Every responsible Canadian is concerned with his own welfare and that of others.

Every neighbourhood, community, and nation has problems that can be solved within the framework of democracy.

Canadians believe that education helps people to lead wiser and happier lives.

A free country affords opportunity and responsibility to its citizens.

Precautions for the health and safety of the nation are taken by our democratic government.

Understanding others leads to healthful interaction and a stronger Canada.

We all belong to groups, e.g, religious, nationality.

An honest, responsible person takes his citizenship seriously.

Refer also to (24:113-133) for the concepts as stated by the Provincial Department of Education. These corroborate those already listed in this thesis.

LANGUAGE

Objectives

The following areas for the study of language in the elementary school are cited in (23:15-16)

Oral Language

1. General

Audience manners, courtesy with others. Standards in oral language. Election of officers, motions. Making announcements. Concise description.

2. Word Study and Speech

Words which are overworked. Errors in choice of words. Review. The speech organs. A, an, the, final t and d, and final o and g. Use of words and phrases that convey feeling. Definitions: etymology - meaning of words, spelling, pronunciation, usage and inflection. Planning a club. Club programs. Preparing agenda. Nominating, voting. Minutes of meetings, making and discussing a motion.

3. Drama

Dramatizing telephone conversations. Stage terms: setting, properties, action, characters. Costume committee. Improvisation, music and movement. Miming. Plays: concern for holding attention, audibility, pace, pausing, stress, inflections that convey emphasis and feeling.

Written Language

1. The Sentence

Complete subject, bare subject. Complete predicate, bare predicate. Topic sentence. Using short sentences to create pace and excitement. Use of sentence fragments in dialogue. Combining subjects and predicates. Sentences with prepositional phrases. Use of unnatural order in sentence for variety. Recognizing the subject before an "of" phrase and after "there is". Recognizing and punctuating a command sentence.

2. The Paragraph

Topic sentence. Review. Understanding that a paragraph should have unity and variety; a

paragraph is the development of a sub-
topic.

3. Report
Class newspaper: different types of
writing in newspapers.
4. Stories
Standards for stories. Beginning, body,
conclusion. Anecdotes. Making an out-
line summary. Class paper. News stories,
editorials, articles. Spacing review.
Stories with a stirring climax.
5. Letters
Spacing review.
6. Poetry
Rules for memorizing poems. Making good
rhymes. Quatrains, couplets. Limericks.

Capitalization and Punctuation

1. Capitals
In outlines. Punctuating a broken
quotation.
2. Punctuation
Punctuation of a broken quotation.

Correct Usage

Among, between. Begin, began, begun.
Blow, blew, blown. Break, broke, broken,
burst. Choose, chose, chosen. Different
from. Dive, dives, dived. Double negative.
Draw, drew, drawn. Drink, drank, drunk.
Drive, drove, driven. Eat, ate, eaten.
Fly, flew, flown. Freeze, froze, frozen.
Give, gave, given. Go, went, gone. Grow,
grew, grown. Hasn't, haven't. In, into.
It's, its. Know, knew, known. Lie, lay.
Off, of, from. Principal parts. Run, ran.
Ring, rang, rung. Set, sat. Speak, spoke,
spoken. Steal, stole, stolen. Swim, swam,
swum. Take, took, taken. Tear, tore, torn.
Throw, threw, thrown. Wear, wore, worn.
Write, wrote, written. Your, you're.

Parts of Speech

Common and proper nouns. Singular and plural
nouns. Possessive nouns. Verb phrases.
Principal parts of verb phrases. Exact and
vivid verbs. Adjective phrases and choice

of vivid adjectives. Adverb phrases. Choice of vivid adverbs. Definition of pronoun; possessive pronoun. Correct use. Definition and use of: preposition, conjunction, interjection.

Conceptual Learnings in Language

Rittenhouse (71:318-320) succinctly defines the concepts of the language course as follows.

Language Comes Alive 6 reviews most of the objectives of the previous books in this series. In addition, the following items are included:

Creative and Practical Writing

1. Planning and Writing
 - (a) minutes of a meeting.
 - (b) class "newspaper", editorials, features, etc.
 - (c) stories with a climax.
 - (d) monologue.

2. Paragraph Structure
 - (a) understanding the concepts of unity and variety.
 - (b) dividing a topic into sub-topics.
 - (c) understanding that a new paragraph is the development of a new sub-topic.

3. Sentence Structure
 - (a) recognizing and using sentence fragments in dialogue.
 - (b) building and combining subjects and predicates.
 - (c) using prepositional and participial phrases to build sentences.
 - (d) recognizing the subject --
 - i. before an "of" phrase,
 - ii. after "There is", etc.,
 - iii. in a question,
 - iv. when there is more than one subject,
 - v. when it is understood.
 - (e) recognizing the direct object.
 - (f) using "unnatural" sentence order to achieve variety and effectiveness.

4. Vocabulary

Using words and phrases that convey feeling and mood.

5. Editing

- (a) to achieve unity and variety.
- (b) to detect misplaced modifiers.
- (c) to correct errors in listing.
- (d) to improve statements that give reasons.

Usage, Mechanics, Terminology

1. Usage of Verbs

- (a) using auxiliary verbs.
- (b) recognizing the verb when it is split.
- (c) using the past perfect tense (the "had" tense).

2. Usage of Pronouns

- (a) as subjects and objects of verbs.
- (b) as objects of prepositions.
- (c) understanding that "who", "which", etc. are pronouns that are used as conjunctions.

3. Usage of Adjectives and Adverbs

- (a) to modify.
- (b) understanding that certain adverbs modify adjectives and other adverbs.
- (c) understanding that adverbs frequently split verbs.
- (d) forming adverbs from adjectives.

4. Usage of Prepositions

- (a) to form phrases.
- (b) understanding that prepositions have objects.

5. Usage of Conjunctions

- (a) understanding that conjunctions need to be properly chosen and placed in the sentence to convey the meaning intended.

6. Punctuation

- (a) punctuating a broken quotation.
- (b) using commas --
 - i. before and, but, or if a new subject follows.
 - ii. to mark participial phrases.

7. Terminology

- (a) sentence fragment.
- (b) modify.
- (c) preposition.
- (d) conjunction.
- (e) interjection (introductory).

- (f) natural sentence order.
 - (g) auxiliary verb.
 - (h) climax and pace.
 - (i) object.
- (Note: simplified terms used are joining word, phrase beginning with preposition or participle, the "had" tense.)

Speaking and Other Language Arts

1. Taking Part in Meetings (informal)
 - (a) planning a club and club programmes.
 - (b) preparing an agenda.
 - (c) nominating and voting.
 - (d) making and discussing a motion.
 - (e) working in committees.
2. Using the dictionary to learn --
 - (a) usages and inflections.
 - (b) etymology.
3. Reading and speaking with due concern for --
 - (a) holding attention.
 - (b) pace.
 - (c) pausing.
 - (d) stress.
 - (e) inflections that convey emphasis and feeling.
4. Studying different types of writing for newspapers.

MUSIC (23:68)

General Aims and Objectives

Neither a special teacher of music nor a regular classroom teacher has to be a professional singer. However, a good ear for music and a voice that is true, pleasing and steady are highly desirable.

Points worthy of consideration

1. Sing for children with directness, simplicity, confidence and enjoyment.
2. Develop a widely varied repertoire of songs.
3. Try to capture the unique spirit of each song.
4. Develop an intelligent and realistic concept of the child's voice.

5. Give careful attention to pitching songs accurately. For this purpose use an instrument such as bells, piano, pitchpipe and others.

Aims and Objectives by Grade III

1. More control of the singing voice, conforming more and more to the rhythm and pitch of group singing.
2. Increased ability to conform to rhythmic patterns in moving to music.
3. Increased interest in experimenting with the easy-to-play instruments.
4. Increased ability in discriminating and reproducing differences between simple intervals (d to m, d to s, etc.)
(1 to 3, 1 to 5, etc.)
5. Increased ability to sing at various levels of loudness and softness (dynamics).
6. Increased application of the reading process through correlation with listening, creative, rhythmic and instrument activities.
7. Increased enjoyment of music by encouraging appreciative listening.
8. Increased use of songbook to follow the music scale in familiar songs, recognizing by ear and by eye, familiar, significant tonal patterns.
9. Increased opportunities to do solo or small group singing.

Conceptual Learning and Objectives for Music

A. Sur et al (85:vi) lists the following objectives.

In "Music for all the Children" the authors believe that music is an essential part of the education of every child. With these books every pupil may participate according to his abilities, interests and needs. As reasonable outcomes of instruction, the pupil may be expected to develop:

1. A sensitivity for the beauty of musical sound, leading to a greater interest in and a better understanding of the art.
2. Ability to participate in the creative aspects of music.
3. An acquaintance with and an understanding of the symbols, terminology, and notation of music . . . familiarity with the language of music.
4. Sufficient experience and skills to afford good amateur performance as essential to personal satisfaction and the development of an intelligent consumer of music.
5. An acquaintance with a wide repertoire of vocal and instrumental music of many periods and styles including music by representative master composers.
6. Knowledge and understanding to be derived from the relating of music to other subject areas and, in particular, an understanding of our own nation and other nations and peoples.

B. Musical Goals for Grade Six as cited by Wilson
et al (94:ii)

Extend learnings of the first five grades.

Sing unison, two-part, and some three-part songs, sing four-part rounds.

Interchange voices in part songs; sing high, low and middle voice parts.

Do couple dances, folk dances of our own and other countries.

Conduct songs using two-, three-, and four beat patterns.

Listen to opera, ballet, oratorio, and symphonic literature.

Recognize orchestral choirs -- strings, woodwinds, brass, percussion; understand the distinction between band and orchestra.

Differentiate between soprano, alto, tenor, and bass voices.

Use standard band and orchestra instruments to enrich classroom music activities.

Make up original songs and instrumental melodies.

Understand the use of triplets in duple meter.

Study syncopated rhythmic patterns.

Be familiar with minor as well as major scale construction.

Increase facility in using numbers, letter names and syllables.

PHYSICAL EDUCATION (23:46)

Objectives

Physical education is concerned with the development of the whole child through the medium of carefully selected physical activities. As an integral part of the total educational program, physical education contributes to the physical, mental, social and emotional development of the child.

The program in physical education provides the child with an opportunity to develop:

1. motor skills.
2. physical fitness.
3. emotional control.
4. socially acceptable behavior.
5. desirable knowledges and attitudes to leisure time activities.

In order to achieve the objectives the teacher creates a learning situation which will ensure the optimum development of each child. Since no two children will progress at the same rate nor possess the same skills, the program must account for individual differences by providing latitude in activity experiences. This latitude is achieved through the use of the problem solving approach, which provides each child with the opportunity to proceed at his own rate in exploring and developing skills in movement, thus providing a situation in which each child realizes a sense of achievement, satisfaction and enjoyment.

READING

Objectives

The reading program as outlined by the Department of Education for Alberta (23:6) is based upon the following objectives.

The goal of the reading program is the maximum development of the reading potential of the individual. This goal is reached only in so far as the following objectives for reading are attained:

1. To stimulate a keen interest in learning to read.
2. To increase and enrich meaning vocabulary.
3. To develop systematic habits of word perception.
4. To develop comprehension and interpretation in abilities and skills.
5. To develop habits of reacting critically to ideas secured through reading.
6. To develop the ability to organize the ideas secured through reading and to apply them to new situations.
7. To develop ability to adjust the rate of reading to specific purposes and materials.
8. To develop ability to read aloud effectively.
9. To develop habits of reading voluntarily.
10. To cultivate preferences for and permanent interest in a wide variety of good literature.

Conceptual Learnings and Objectives

McIntosh et al (56:43-45) adds to the basic objectives as follows:

I. Attitudes and Appreciations

1. To foster the love of books and the appreciation of how books enrich our lives and widen our experiences.

2. To encourage the use of printed material to satisfy the desire for information.
3. To develop the attitude that reading is thinking.
4. To foster an appreciation of rhythmic and sensory impression through reading and listening to poetry and prose.
5. To develop ethical values through consideration of the behaviour of the characters in the stories.
6. To develop an appreciation of the contribution of people who lived in earlier times.
7. To develop fine literary taste through reading a wide variety of stories, realistic and fanciful, informative and amusing, modern and traditional.
8. To promote a thoughtful and critical attitude about an author's purpose and point of view.

II. Good Reading Habits

1. To strengthen the habit of reading independently for the solution of problems and for pleasure.
2. To strengthen the habit of adjusting one's method of reading to the type of material read and to the purpose for which it is read.
3. To strengthen the habit of using more than one source for an answer and of checking information found.
4. To strengthen the habit of reading with concentration for longer periods.
5. To strengthen the habit of independent attack on unfamiliar words through the use of various skills.
6. To strengthen the habit of using the table of contents, the index, and the glossary.

7. To develop further the habit of thinking critically about different types of material.

III. Skills

1. To enrich and extend vocabulary through the knowledge of word relationships.
2. To strengthen the ability to use context clues to attack new vocabulary and to determine word meaning.
3. To develop greater skill in the use of the dictionary.
4. To further the use of phonetic and structural analysis in the recognition of new word forms.
5. To promote the ability to recognize the author's main idea, and the details and sequence of ideas or events which support the main idea.
6. To further the skills needed in using the ideas gained from reading in such ways as drawing conclusions, making inferences, seeing cause-and-effect relationships, and forming judgments.
7. To further the skills of critical reading in such ways as evaluating information gained from reading, discriminating between relevant and irrelevant ideas, and in using facts to form opinions.
8. To develop the ability to read creatively in such ways as using the author's ideas to clarify one's own thinking.
9. To develop the ability to locate information by using the table of contents, the index, and other aids.
10. To strengthen the skills needed for note-taking, outlining, and preparing reports.
11. To develop skill in understanding and using pictorial and graphic material in textbooks and reference books.

SCIENCE

Aims and Objectives

Four of the conceptual schemes to be developed throughout the elementary school curriculum have a definite outdoor environmental association. (23:33)

- Living things are interdependent with one another and with their environment.
- A living thing is the product of its heredity and environment.
- Living things are in constant change.
- The universe, and its component bodies, is constantly changing.

The objectives of science for the elementary school child are as follows: (23:33)

1. Skills

- As a result of science instruction, the elementary school pupil should:
- a. develop the ability to inquire, i.e. ability to think and investigate science through the use of process skills (behaviors) such as observing, classifying, communicating, inferring . . .
 - b. demonstrate manipulative skills in the use of apparatus in order to conduct investigations.

2. Attitudes

- Much of the spirit and meaning of science is transmitted to students from the teacher. The teacher must create conditions of learning that will enable the student to:
- a. demonstrate a growing curiosity and interest.
 - b. demonstrate intellectual honesty.
 - c. be open-minded.
 - d. look for cause-effect relationships.
 - e. suspend judgment when data is inadequate.

3. Concepts

As the student proceeds through the elementary school science program,

he should develop an increasing body of scientific information in the form of concepts.

Conceptual Learnings

Barnard et al (3:12) lists the following key concepts as the "conceptual framework for an elementary science curriculum."

1. Events in the natural environment happen in an orderly rather than a haphazard way; man searches for laws to explain this order by observing, hypothesizing, checking his ideas and rejecting those which do not square with reality.
2. Lawful change is characteristic of events in the natural environment; although living things tend to produce living things like themselves, over millions of years the earth and living things on the earth have changed and diversified forms of life have evolved.
3. To find order in the natural environment, the scientist seeks basic units that can be put together in an almost infinite variety of ways; the cell and the atom are examples of such units.
4. All objects in the universe and all particles of matter are constantly in motion; man has discovered and stated the laws governing their motion.
5. The motion of particles helps to explain such phenomena as heat, light, electricity, magnetism, and chemical change.
6. There is a basic tendency toward stability or equilibrium in the universe; thus, energy and matter may be transformed, but the sum total of matter and energy is conserved.
7. When equilibrium is upset in organism-environment interactions, regulatory mechanisms go to work to restore equilibrium.

8. There is a relationship between structure and function; the structure of parts of living organisms determines the function of those parts.
9. The scientist has developed measures of space, time, and matter so that he can communicate explanations that are reproducible and make predictions about events in the natural environment.
10. Man has changed and continues to change the natural environment; but because he is often ignorant of long-range consequences, his actions may have harmful effects for himself and for other living organisms.

Conceptual Divisions Within the Science Program

- A. Barnard et al -- in section "Measuring Things".

Concepts:

1. The essence of measurement is unit iteration; to measure it is necessary to establish a unit and to report that unit as often as necessary.
2. In order for us to be able to communicate about measurements, standard units are necessary; two standard units are necessary; two standard systems, the English and the metric, are used.
3. Measures of matter include weight volume and mass; mass is a measure of the quantity of matter in a substance.
4. Some measurements, such as speed, can be derived from other basic units.
5. To describe motion, we need to know both speed and direction; quantities that tell both are vector quantities. (3:vii)
6. Velocity is a vector quantity; it tells how fast and in what direction something is moving.
7. Some quantities stand for a change in another quantity in a given period of time; the change in speed along a path in a given period of time is called acceleration.

8. Graphs enable us to see various kinds of relationships.
9. On distance-time diagrams, the steepness of the straight line is an indication of speed; the greater the speed, the more the line rises in the same time. (3:1)
10. Measurement is an important part of the scientist's work. (3:2)
11. There are differences between the English system and the metric system. (3:6)
12. For accurate communication, conditions under which measurements are taken should be reported. (3:9)
13. The volume of an object increases when the object is heated. (3:10)
14. The weight of an object is not constant, but changes with changes in altitude. Therefore the weight of an object must be stated in terms of its position. (3:11)
15. All objects have mass.
16. Mass is the amount of matter in an object. (3:12)
17. The measurement of the speed of a moving object is the ratio between the distance travelled over the time taken. (3:14)
18. It is important to be as accurate as possible when taking measurements.
19. Many scientific discoveries have resulted from comparisons based on accurate measurements. (3:21)
20. The forces acting on an object can be added together to find the true path of the object. (3:30)

B. Within each of the major concept areas, Barnard et al list the following as they apply to the section "Life on the Earth."

1. Green plants link the earth's elements, the sun's energy, and living things.

2. Plants and animals are adapted to the environments where found. (3:235)
3. Energy is needed to produce motion or change. (3:236)
4. Green plants contain chlorophyll. (3:238)
5. One of the products of photosynthesis is oxygen. (3:240)
6. All things depend on green plants for oxygen. (3:240)
7. Photosynthesis releases oxygen to the surroundings. (3:241)
8. Plants help to make soil by breaking up rocks.
9. Lower plants do this by the chemical action of their by-products.
10. Higher plants break up rocks by the mechanical action of their root systems.
11. Soil is kept fertile by the action of microorganisms, worms, and insects and the decay of higher plants. (3:242)
12. The climate of an area to a large degree determines the types of plants that predominate.
13. A combination of temperature, solar radiation, and rainfall determines the amount of photosynthesis taking place.
14. Scientists classify areas of the world according to the types of life that are predominant in them. (3:245)
15. Plant communities change with time.
16. As changes occur, organisms must adapt to the new surroundings or else die out.
17. Those plants and animals best adapted to the new conditions survive and replace the less fit. (3:250)
18. An adaptation is a quality or set of qualities possessed by an organism that help it survive in its surroundings.

19. These traits, or qualities, are inherited.
20. Under changing surroundings some traits prove advantageous; others do not. (3:252)
21. All animals have traits that enable them to exist in their natural surroundings.
22. Removal from the natural living conditions frequently causes extinction.
23. Since many animals prey on others, some adaptations are defensive. (3:255)
24. Animals use the materials of their surroundings and leave traces of their usage behind.
25. Physical and chemical changes occur that keep the environment in a state of change. (3:258)
26. Most great changes in the environment take thousands of years.
27. We have indications that great changes are taking place even today. (3:259)
28. From time to time rapid changes take place, that are due to volcanic action, winds, and earthquakes. (3:260)
29. Plant distribution is assured by the production of a lavish number of seeds in most varieties.
30. All the seeds do not germinate.
31. Enough do germinate to ensure survival of the species. (3:261)
32. When one organism feeds on a second organism, an overabundance of the first is prevented by the scarcity of the second.
33. When one organism in a community is affected by a change in its environment, it directly or indirectly affects all other organisms in the same community. (3:262)
34. Soil study uses mathematics as a tool for understanding. (3:268)
35. Crops, woodlands, and wildlife require water.

36. Industry requires water.
37. Every citizen needs water. (3:270)
38. Man depends on forests for many products, recreation, homes for wildlife and the prevention of floods. (3:272)
39. Air is a mixture of gases and suspended solids.
40. Clean or pure air contains oxygen, nitrogen, and a very small amount of other gases.
41. Polluted air contains larger quantities of other gases, many of which are harmful to life.
42. Air pollution is increasing as technology increases. (3:274)
43. Every human being is a resource.
44. In conserving human resources we must deal with the problems of poverty and ignorance and the danger of using up our resources of food, fuel, living space, and privacy. (3:290)

C. Under the heading "How Animals Behave" Barnard et al (3:299) have included the following concepts to be learned at the Grade VI level:

1. Scientists are learning about the behavior of animals through careful observations of them under controlled conditions; they look for relationships between observed behavior and conditions under which it occurs.
2. Scientists attempt to develop ideas about animal behavior that will apply to many animals.
3. Animals respond to environmental conditions only as they sense the conditions.
4. Animals adjust to changes in their environment.

5. There is a significant relationship between the structure of animals and their behavior. (3:299)
6. Scientists who study the behavior of animals are called ethologists.
7. The ethologist assumes that the behavior of animals is the result of an interaction between a stimulus in the environment and the nature of the animal; he searches for the particular stimulus that might set off a reaction. (3:300)
8. Animals respond to environmental conditions only as they sense the conditions; they sense their environment through different kinds of sensory receptors. (3:307)
9. Chemical receptors are one kind of sensory receptors.
10. They enable animals to adjust to changes in their environment. (3:309)
11. Radio, heat, light and cosmic rays are all similar forms of energy radiation.
12. Differences between them result chiefly from differences in wave lengths.
13. Animals are equipped with receptors for some of these radiations.
14. Light receptors are called photo-receptors.
15. In some animals the receptors are complex organs (eyes); in others they are simple cells. (3:312)
16. Specialized organs can detect changes in heat intensity.
17. The entire organism reacts to the changes in temperatures. (3:317)
18. Mechanical receptors record touch sensations. (3:319)
19. The nervous systems of animals control their behavior.

20. A nervous system consists of all the receptors and effectors that respond to stimuli plus a control center.
21. As we study both simple and complex organisms, we see how the complexity of nervous systems increases with the complexity of the organism.
22. A study of nerve structure is necessary for an understanding of animal behavior.
23. In studying animal behavior we find a similarity to some of our own actions. (3:324)
24. Nervous systems in animals have developed over millions of years.
25. Although all human beings have common ancestors, individuals are quite different from each other.
26. All human beings have common characteristics.
27. These characteristics are found in people who are not close members of our families. (3:330)
28. Adaptation is a key idea in biological science.
29. An adaptation is a change in the structure of an animal that makes it easier for the animal to survive.
30. There is a significant relationship between the structure of an animal and its behavior. (3:332)
31. Scientists reject the notion that animals are born with instincts that will appear after birth as the result of an inherited blueprint; stimulation from the environment is necessary to release the behavior. (3:334)
32. Releasers, or signals, to which mature animals respond may affect the senses of sound, sight, touch, and smell. (3:336)

D. In the current science curriculum Barnard et al seeks to develop the understandings inherent in the area of

"Astronomy" by citing these concepts:

1. Over the years, a number of ideas or models have been developed to explain the motion of celestial bodies.
2. Models of the solar system must explain the observed motion of bodies in it.
3. Both earth-centered and sun-centered models can be used to explain many motions in the solar system; however, the sun-centered model is simplest. (3:142)
4. Parallax makes it possible to estimate distances.
5. Distance and sizes may be measured by triangulation.
6. Many facts about the sun and its nine planets have been discovered by indirect methods of measurement.
7. The sun is only one of many stars making up the Milky Way Galaxy.
8. The universe is made up of many galaxies. (3:143)
9. Models are attempts to group facts together, to correlate what is known with what is unknown. (3:146)
10. The earth-centered model of the solar system does account for the observed positions of the planets. (3:150)
11. Retrograde motion is illusory and based on the relative positions of the planets as they revolve around the sun in different orbits.
12. Both earth-centered and sun-centered models can be used to explain many motions in the solar system.
13. The sun-centered model is the simpler. (3:154)
14. The two models account equally well for the motions of the sun, moon, and planets. (3:156)

15. When an object is viewed from two slightly different view points, it appears to shift against the background of more distant objects. We call this phenomenon parallax.
16. Parallax makes it possible to estimate distance. (3:159)
17. Measurable parallax of a nearby star would constitute a proof of the Copernican theory. (3:160)
18. As the distance from an observer to an object increases, the amount of parallax decreases. (3:163)
19. Triangles can be used to measure distances by using simple proportions. (3:164)
20. Sizes may be measured by triangulation. (3:171)
21. The technique of similar triangles can be used for actual astronomical measurements. (3:174)
22. Astronomical distances are calculated in light years.
23. Many facts about the sun and its nine planets have been found by indirect methods of measurement. (3:177)
24. A balance of forces exists in the solar system between the distances of the planets from the sun, their masses, and their gravitational attraction on each star.
25. This balance of forces results in a certain velocity that prevents the planets from falling into the sun and that maintains them in their orbits. (3:178)
26. The pupils should acquire some feeling for the magnitude of the universe.
27. The sun is only one of billions of stars making up our galaxy.
28. There are billions of galaxies in the universe.

E. Youngsters ask many questions about rainbows, etc. and at this level they are given the opportunity to learn more about "The Nature of Light." Barnard et al (3:193) lists the following concepts for Grade VI pupils:

1. The idea that light is made up of particles can be used to explain some of the behaviors of light, namely: light travels through empty space; it travels in straight lines; it has a measurable speed; it is reflected; it forms images; it is bent (refracted) when it enters a different substance.
2. The idea that light is made up of waves can be used to explain the above, plus diffraction (bending of light as it passes a sharpe edge). (3:192-193)
3. Light forms images.
4. Because light travels in straight lines, the image we see in a camera is actually upside-down. (3:201)
5. Mirror images are the result of the regular reflection of particles of light. (3:203)
6. The refraction of light makes a pencil in a glass of water appear broken. (3:211)
7. When a particle of light enters a different medium at an angle, it changes both its speed and its direction. (3:213)
8. Diffraction and interference cannot be accounted for by the particle theory of light. (3:216)
9. The characteristics of wave motion can be used to explain some of the behaviors of light. (3:218)
10. We can study waves in water as an analogy to light waves. (3:219)
11. Both the straight-line motion of particles and wave motion can be reflected. (3:221)

12. Light bends as it passes a sharp edge.
13. This bending is called diffraction.
(3:224)
14. A combination of both theories is necessary to explain all the observable properties of light. (3:225)

SOCIAL STUDIES - ENTERPRISE (23:22)

Objectives

The general objective of social studies education is to contribute to the development of citizens who:

- "(1) understand . . . changing society;
 (2) possess a sound framework of values and ideas which indicate what ought to be, set goals for the individual and give direction to his actions; and
 (3) have the necessary competence . . . to participate in group living in such ways as to make changes in the direction of the desired values and ideals."*

Three areas of concern for each teacher of elementary social studies are:

1. The Acquisition of Knowledge
 Through an understanding based on facts learned in social studies the pupil should develop:
 - a. A knowledge of Canada, its history, its resources, its peoples and its possible development in the future.
 - b. A knowledge of problems and achievements of other nations and an understanding of the interdependence of peoples.
 - c. A knowledge of contributions made by earlier peoples to the development of contemporary life.
2. Development of Skills
 Desirable skills include:
 - a. Techniques of problem-solving and critical thinking.
 - b. Techniques of expression in language and in the arts.
 - c. Group-work procedures.
 - d. Study skills.

* Quillen and Hanna, "Education for Social Competence," Scott, Foresman and Company. p. 55.

- i. Locating and interpreting information from books and other sources.
 - ii. Oral and written reporting.
 - iii. Making and reading globes and maps.
 - iv. Making and interpreting charts, graphs, diagrams and tables.
 - v. Using a chronological framework.
3. Development of Attitudes and Behavior
From experience in social studies, pupils should develop an appreciation of the democratic way of life. They should:
 - a. Learn to cooperate with individuals and within groups, to accept responsibility, and to respect and have concern for the rights of others.
 - b. Learn to apply problem-solving procedures to contemporary society.

SPELLING

Spelling is an integral part of every area of the Elementary School Curriculum. Opportunity to practise those skills learned in that part of the timetable allocated to spelling is abundant if the teacher capitalizes upon the "teachable moment". (79)

Aims and Objectives

The following objectives are recognized by the Department of Education. (23:17)

1. Primary Aims:
 - To develop spelling power or a spelling sense which will help the pupil in spelling any required words, not mere mechanical competence in spelling a limited number of drilled words.
 - To establish habits of self-dependence in writing: knowledge of how to locate correct spelling; ability to check the accuracy of spelling in all written work; competence in thinking out the spelling of required words; writing of derived forms.

2. Secondary Aims:

- To develop a spelling consciousness, i.e. a critical attitude toward one's own spelling.
- To develop a spelling conscience, i.e. an aversion to incorrect spelling.
- To teach correct pronunciation, depth of understanding, and correct usage of words through a comprehensive training in the use of the dictionary.

Similar aims are listed in (50:v) and (77:viii) both of which are the recommended texts for Alberta's Grade 6 pupils.

Before a child can be taught to spell any words, these conditions must be met: (23:18)

- The word must be in his speaking and reading vocabulary.
- He must be able to hear the sounds and say the word correctly.
- He must be able to see the word clearly, noticing similarities to and differences from other words.
- He must know the names of the letters in the word.
- He must learn eye-hand coordination so that he may form the letters.

These pages represent the ideals in Education for Alberta's children and to which teachers of this province endeavour to guide their charges. The school program contains the particular experiences from which children can generalize abstract ideas and in the following chapter examples of such particular experiences are cited using the medium of the out-of-doors.

CHAPTER V

PROGRAM ACTIVITIES

In citing activities for an outdoor education experience it is difficult to comprehend all the possible variables and account for them, but such an attempt will be made.

The location of the experience will favor some activities and not others as will the season of the year, the length of the experience, the weather, the numbers taking part and so on. Even the prior experiences of the pupils will affect the program offered, for the child brings with him all his past experience, knowledge, attitudes, fears, etc. Hence, the camper can truly accommodate only those activities for which he is in a state of readiness to learn.

Learning new material, redefining previously learned material in a new way or revising and recalling past knowledge -- all have a part in the outdoor experience. Another aspect of the program involves fixing points of reference to which the teacher can refer in the weeks to come.

As the learning experience is short in comparison to the child's school career, the opportunities for self growth should take predominance over those activities requiring a competitive spirit among peers as this can be a

retarding factor to learning for some children.

Although the activities cited in this study are grouped according to subject area, this does not mean that the only learning possible is in that area. On the contrary, living is a learning process and no program, however seemingly complete, can dictate the learning that can occur during a twenty-four hour day. As an example let us take the task concerned with the determining of the character of water.

This would involve:

- the ability to take notes and find facts.
- spelling and writing.
- measurement in various forms, e.g., comparative numbers for defining clarity, graphed measures of temperature and water level, ratios involving salinity, etc.
- a cooperative work effort with others.
- incidental learning about bank erosion or where fish might be found, etc.
- the physical coordination of large and small muscles to complete the task successfully.
- practise of water safety knowledge.

The following activities may serve as ideas for a day camp program or an isolated half day away from the school grounds, but primarily they have been planned for a resident camp program of at least five days. With this in mind then, adaptations to any of the activities cited can readily be made to accommodate the required kinds of learning experiences of any group.

The following ideas may serve a useful purpose as part of the camp program by including them as isolated activities suited to the environment or in combination with other activities cited in other subject areas.

Activities to Teach Arithmetical Concepts

1. To recognize and gather if possible, three dimensional geometric shapes that are available at the site, e.g., part of a branch as a cylinder, a gall as a sphere, etc.
2. To become acquainted with the concepts of area, distance, direction, etc.
3. Adjectives that describe shapes could be emphasized as concepts are being discussed.
4. Measuring accurately, and estimating approximately e.g., the width of the river, the speed of a river, the distance hiked, the staking of a claim, etc., the time of day from the sun's position.
5. Continue the keeping of the financial statement for camp, e.g., credits and debits, stock increases and decreases, stock in the tuck shop compared to the number of campers and the number of days left in camp, etc.
6. Ratios (1) whereby the number of different shaped leaves (as an example) collected by a group is compared i.e., elm to maple or pine, etc. Or, (2) the number of diseased leaves or imperfect leaves compared to the number of perfect leaves expressed in a number of ways. (3) The ratio of objects natural to objects artificial found in a pocket check, etc.

7. Solving problems involving unknown quantities.

Triangulation can be used quite successfully in many problems, e.g., the height of a tree.

8. Maintaining the ratio as it increases or decreases, e.g., from a given quantity of goods, how could we reduce it to individual proportions or increase it for three cabin groups, i.e., to make twists over the camp fire, the individual serving has a ratio of ingredients: 4 tablespoons flour, 2 tablespoons sugar and 1 tablespoon milk; $4 + 2 + 1 = 1$ twist. In addition, to mix fractions, the recipe calls for $1/8$ teaspoon of salt. This could be expressed in quantity for a cabin group or commercial quantities, e.g., 2 pounds flour could be used and the number of individual twists from same could be computed.

9. Computing board feet of lumber in logs.

10. Computing the wasted volume of a log used for lumber.

11. Giving answers in percentages, work out from a crop yield, the quantity sold, cost per bushel, hail damage, or degree of slope of a hill or river bank, etc.

12. Be able to compute areas, e.g., the archery range, the camp property, surface of the river between given points, etc., and express them in square feet or yards.

13. Compute precipitation in decimals. Chart daily findings on a graph.

14. Compute wind speed.

15. Chart temperature readings each day. Work out an average.

16. Compare the expression of temperature readings using fahrenheit and centigrade measures.

17. Compute the volume of water passing a given point at the creek or in a pond or animal drinking trough, etc. Express answers in cubic measures.

18. Cut and pile a cord of wood.

19. Practice using a compass. Understand its uses and work out fractions of the whole which indicate directions.

20. Relate compass work to a watch in order to find directions.

21. Relate both 19 and 20 to map work.

22. Work out directions from the stars.

23. Estimate the height of clouds, speed, etc.

24. Conduct a camp bank.

25. Administer the camp's tuck shop.

26. Find the areas of commonly used terms, e.g., an acre, a quarter section, etc.

27. Measure a nautical mile and work out the speed of the river in knots.

Activities to Teach the Concepts of Art

Art can be a profitable sensual experience if the teacher, or counsellor, prepares the camper appropriately and guides the experience of each individual. The pleasures, satisfactions and relative freedom while working are the more than adequate rewards to both camper and counsellor, not to mention the successful completion of the task.

Activities carefully chosen and appropriately defined can channel the child's senses in new directions. These avenues can help him to discover wider horizons of vast potential through which he can create, manipulate and appreciate line, direction, shape, size, color, tone and texture as never before.

1. Subjects to sketch and paint in the field e.g.,

Subtle colours in winter snow
 Grains in wood
 Varied texture in the bark of trees
 Intricate design of a honeycomb
 Muted colours of early spring fields
 and farms
 Many values and intensities of summer
 foliage
 Shadows of tree branches . . .
 Subtle shapes and colours of driftwood
 and fall weeds
 Patterns of frost . . .
 Golden shimmer of autumn haze
 Overlapping ripples in a pond
 Intricacy of a spider's web
 Never-ending change of colour
 orchestrations at dawn and sunset
 Miracle of growing things
 Filigree pattern in an insect's wings
 Varied formations of clouds
 Dew on early morning flowers and grass
 Reflections in water
 Neutralized colours of a foggy, rainy
 or misty day
 Highlights and sparkle in ocean waves
 Unlimited shapes of pebbles and stones
 Magic of sunlight filtering through . . .
 Tracks of animals . . .
 Endless variety of tree and leaf forms
 Subtle color of moss on old stone . . .
 Patterns of contoured farms . . .
 Shimmer of wheat fields. (89:12-13)

Plus others appropriate to the setting that may include a campfire, outdoor cookery, a rainbow's muted tones, beaver-gnawed tree stump, camouflage, etc.

The media may vary, e.g., pencil, charcoal, water colors, felt tipped pen, colored pencil, chalk, ball point pen, crayons, etc., on white paper, colored paper, construction paper, birch bark, cardboard, masonite, etc.

2. Some of the objects available in the field could be brought back for future work, indoors if weather is inclement, or back at school. The following objects could be used in still life arrangements, e.g., cattails, reeds, rock, pieces of bark, grasses, skeletons of leaves, bones, driftwood, etc.

3. If the camp is near natural clay, some pottery could be undertaken, but because of the drying period involved, the children may or may not be able to fire them before returning to school.

4. Prints can be made on paper from leaves, bark, etc. These sheets can then be folded for use as notepaper, in autograph books, place cards, etc.

5. Plaster casts of animal tracks can be made and finished as ash trays or pin trays, while the print half can be used to decorate notices, etc. on the camp bulletin board.

6. Carving and whittling can occupy much of a child's time but the safety aspects should be taught when the idea is introduced. Realistic and abstract objects can be the most worthwhile result of a child's insight, care and patience. Objects such as lamp bases, plaques, tea pot stands, key rings and cooking utensils, etc. can be completed on the site.

7. Many specimens from nature can be combined to produce collages of various types, e.g., framed and hung, e.g., pictures suspended etc. Dried arrangements using driftwood, e.g., mobiles; rocks and fungi make excellent center pieces.

8. Small smooth stones can be set in colored plaster-of-paris to cover bottles or cans as permanent vases. Extra plaster-of-paris applied to the base can alter the regular shape of the container and also weight the bottom to prevent it tipping so readily. Once glazed, the stones have the permanent clear-colored appearance which brings out the color and structure of each rock. The same process can be used to decorate tops of tins to be used for pins, money boxes, etc.

9. Models of the camp site can be built in miniature using natural materials.

10. Various specimens, e.g., leaves, feathers, etc. can be pressed and sealed between sheets of Kleenex tissue using wax as a seal.

11. Kites of various styles are both a challenge and a joy to campers. These can be made from construction paper, newsprint, plastic, etc., and can be glued, stapled or bound together.

12. Some rocks are very smooth and can be used immediately for pendants, broaches, etc. just by attaching the appropriate clasp. Chains can be made by the camper from copper or platinum wire. Some campers may want to collect small rocks for use after they have been tumbled.

13. The cross sections of some nuts, e.g., hickory and black walnut can be made into decorative pins, belts and earrings, etc.

14. Many of the pioneers used native dyes in home-spun materials. Various colors and natural dyes can be obtained from items around camp. These could be used to dye bleached or unbleached calico which could then be used as the background for a picture collage, etc.

15. Weaving grasses, reeds, etc. into useful objects can be a challenge. These materials generally need to be dry before commencing work, so the materials may be gathered at camp for use later in the year, or collected and used in the late fall.

16. Photography is often a natural interest because youngsters have cameras with them and the outdoors offers them a vast array of subject matter from which they can choose. Composition is important in this activity and campers are eager to absorb the principles inherent in the "teachable moment".

17. Picture frames can be made and fitted at camp to finish a "work of art".

Activities That Will Teach the Concepts of Handwriting

Writing is an essential part of the outdoor experience in that letters, notes, impressions, articles, etc. need to be recorded. For this reason practice will be afforded each child and the teacher should be cognizant of individual effort and need. Writing underlies many of the

activities listed under language and thus is not duplicated here. Refer to pages 108 to 112 of this study.

Activities That Will Teach Health Concepts

Many of the learnings suggested in the units at the Grade VI level require attitudinal alignment by the child to all aspects of his everyday life. The foundational work for such changes began in Grade I and at the Grade VI level furtherance of knowledge and skill is promoted. While a child is at camp the teacher has ample opportunity to observe his campers' health practices. Based on these observations then, and taking advantage of new situations to impart new skills and knowledge, the teacher could readily include some of the following:

1. Concern for and practice of good manners, e.g., table manners, introductions, etc.
2. Practice of rules of etiquette as evidenced by respect for self and others.
3. Practice of personal health habits which are indicative of personal attitudes toward health, e.g., to sleeping, eating, personal hygiene, clothing, etc.
4. Concern for and recognition of pollution of air and water.
5. Acceptance of responsibility for self and, to some extent, others as camp is planned and conducted.
6. Awareness of accident potential and the exhibiting of a conscious effort to prevent accidents. This should also include awareness of what to do in an emergency

and how to carry out minor first aid when required.

7. Menu planning can be done by the children coming to camp, but the real test is in eating adequate quantities of the approved foods at the site.

8. Food storage and preparation are natural activities on outtrips, overnight hikes or picnics.

9. Self evaluation and speculation on the part of the campers as to why they might learn more at camp. The comments may be different for each child, but equally valid. This could also serve to review the area of "How We Learn". (49:128)

10. The section "You and Others" (49:150) might better be a part of the pre and post activities rather than a specific item in the camp program. But if the opportunity arises, the student could be reoriented to preview learnings and discussions, e.g., on self control.

11. At camp innumerable opportunities for the teaching of intangible values and attitudes occur. Campers can learn, modify and practise their reactions to these as they learn and live together, e.g., sharing, cooperating, accepting and being themselves, while being mindful of others.

12. Chores are inherent in the camp program and although they do not have a glamorous title nor appeal readily to active inquiring minds, they are nonetheless a learning experience. Therefore setting tables, making a bed, sweeping the dining hall, showering, washing up or taking out the garbage are settings for some of the most important lessons for life and should be remembered as such.

13. At times an activity in one area has learning potential for another, e.g., the campers may be observing water sheds and their effects on the natural environment, man's use of them, the indirect effects felt some miles away, etc. Such a learning experience, to be complete should also help the child understand water supply systems and variations in technique for water purification as is practised in the area. (49:173)

14. Sociologically, campers will learn something of the division of labor and group dynamics by participating in the camp experience itself.

15. Examples of cooperative activities are: setting up shelters, organizing the campsite including latrine building, fire site buildings, cooking, cleaning, etc., map and compass courses, etc.

16. Seeing to their own needs, e.g., clothing requirements, care of equipment, etc., are examples of responsibility appropriately assumed.

17. Specific activities needed at the site might involve learnings not previously mentioned, or else modified to suit the situation, e.g., making drinking water safe for use, care in cooking over an open fire, swim safely in a creek or water hole; use of knives and axes, fire precautions, and drill for the site, food storage from animals, and protection from spoilage, minor first aid knowledge and practice and protection from insects, chills, etc.

Activities That Will Teach Language Concepts

The following activities have been suggested by the approved texts for language at the Grade VI level. Examples appropriate to the outdoor setting have been included although the opportunities for application may be more limited than this list implies. It is the responsibility of the staff member to capitalize upon the "teachable moment" as well as to integrate the learnings within this subject area or within other subject areas.

1. "Chit-Chat" (71:5)

- Your parents are coming to camp for the final campfire. What do you think the dialogue will be between you and your parents?

- Two squirrels are chattering to each other in the trees near you. What do you think they are saying?

- You are to report your camp experiences to the service club members who supported your school's camp financially. What will you say to them and what do you think their response will be?

2. Write a short "monologue" (71:11) beginning with: "I've been hired as the camp cook! All those hungry" "I'm just a quiet living porcupine, but these children"

3. Titles (71:22)

Title descriptive passages, articles for the camp newspaper, stories, talks, poems, etc.

4. Assuming roles at a meeting and conducting such a meeting, e.g., the Campers' Club. This group would involve

the whole class and should be active throughout the year, i.e., be involved in the camp planning, its conduction and evaluation. The class members should hold all major positions in the club while the class teacher should be a member of the club and if so requested may become a committee member.

5. Write "a unified story" (71:38) e.g., "A Wet Experience." "Sleeping Under the Stars". "The Lure of the Wild".

6. "Words and Moods" (71:42) e.g., words that suggest textures, sounds, feelings, atmosphere, etc. How could they be used to describe a scene or in a poem.

7. "Forming Adverbs from Adjectives" (71:48)

8. Add to your word power and personal list of words for future use by noting words that counsellors use, those that have similar meanings from your dictionary and those whose meanings you have not understood before. Refer (71:49-50)

9. "Pictures in Speech" (71:52) Can you create a word picture for someone who was not at camp so that he could see it too? e.g., topics might include:

How John fell into the creek.

The porcupine in the kitchen.

How we flipped pancakes over the open fire.

The thunder storm on our overnight hike.

10. Give an account of your adventures at camp to: the school and staff at an assembly; the school board members; local service clubs and business people; parent/

teacher association; local radio station; etc.

11. "Emotions" (71:58) Write an account of vivid emotional experiences, e.g., leaving home (separation); climbing a cliff (exciting); four days of rain (depressing); the deer's protection of her fawn (moving); poem, The Campfire, etc. "Have you ever watched a campfire . . ."

12. Help children correct their speech by remembering those aspects of grammar that you have covered in class. e.g., "adding groups of words" (71:60); "Listing" (71:66); sentence length (71:71); commas (71:164); participles (71:162); phrasing, etc., (71:160)

13. "Descriptions" (71:77) e.g., The Call of the Wild by Robert Service (76:26-29); Haiku Poetry from the Pepper Pod, etc.

14. "Making an Announcement" (71:85) e.g., The committee in charge of evening activities may want to announce the program following a meal; changes in schedule need to be announced when all children are assembled, etc.

15. "Reporting" (71:86) a news story of e.g., an incident at the river; the result of cabin 3's challenge match, etc.

16. "News Sheet" (71:88). This could be read and/or printed at the conclusion of an outdoor educational experience. It could include genuine reports, program highlights, visitors or guest speakers, interviews with resource people, weather report and predictions, favorite outdoor recipes, etc.

17. Local legends (71:123). Some of the legends of the area could be told to the children while sitting around the campfire or at an historical point. e.g., Indian legends (35) and historical tales. Refer to (97 and 96), (53). Give the children some background information, e.g., why the local village is so named. From this they could develop legends for themselves.

18. Each cabin group can write and act out its own play, e.g., The Discovery of This Site, Trappers Bartering with the Hudson's Bay Co.

19. Some groups can develop and perform a play (also refer 41:221) or pantomime (41:241), melodrama (41:85-132) using homonyms, e.g., a kangaroo court, a story in tableau form, Christmas in _____ (the month in which the youngsters attend camp), etc.

20. Prepare a program for an evening campfire and display it on a board.

21. "Fact Finders" (71:137) e.g., prove or disprove statements by quoting the appropriate proof, e.g., page ____ in text ____ e.g., Rabbit tracks always appear in parallel form.

22. "Taking notes" (71:139). Ample opportunity for practice can be had during all the outdoor activities. Upon return to the campsite, check the facts in the books available to you and rewrite information in sentences and paragraphs.

23. "Research Projects" (71:144). e.g., The

history of our outdoor education site, the geological history of Alberta, how the west was won, etc.

24. "Model Letters" (71:310). Business letters will need to be written to various organizations, companies, etc. both before the camp and following it. Personal letters should be written from camp to parents, relatives, friends, etc.

25. Opportunities for public speaking are many at camp, e.g., introducing guests, or parents to a teacher and resource people, thanking a resource person, e.g., a local farmer for sharing his knowledge and time, announcements, as master of ceremonies of a campfire, verse speaking or reporting (also refer 41:173), reporting to assemblies, service clubs, etc., reading camp newspaper to whole camp or cabin group, telling stories (41:103-113), telling tall tales (41:112).

26. Write personal poems that are descriptive, set an atmosphere, or express an emotion. Write in quatrain, couplet and limerick form (41:163-167).

27. Compose a miner's right applicable to the area of the camp.

28. Prepare and circulate hunting and fishing licenses suited to the Grade VI level.

29. Identify specimens brought in from the field and label them neatly.

30. Keep a log or diary of camp experiences.

31. A personal research and study time should be available to all children for part of each day.

Activities That Will Teach the Concepts of Music

Rhythm and harmony surround us at all times and not less so at camp. With a change of pace and environment the child's ear will often be captured by sounds that are new and arresting. As well, the atmosphere at camp often allows the child a freedom to experiment whereas a tonic scale does not, therefore the activities listed below should have an emphasis of fun and expression rather than one of correctness.

1. Learn to sing different types of songs, for example:

Rounds

- O Glowing Fire (85:1)
- Let us Sing Together (85:39)
- Birch Canoe (85:42)
- Vive L'Amour (85:177)
- Dona Nobis Pacem (94:34)
- Hey Ho! Nobody Home (94:36)
- The Inch Worm (94:74)
- Ah, Poor Bird (94:88)
- The Swan Sings (94:92)
- Kookaburra (61:9)
- Three Blind Mice (65:33)
- Come to Dinner or
- Are You Sleeping (65:33)

Action Songs

- She'll be Comin' O'er the Tundra (85:15)
- Dry Bones (94:148)

Pull on the Oars (94:8-supplement)

Donkey Riding (61:93)

My Bonnie (61:69)

Nonsense Songs

Lame Tame Crane (85:6)

This Here Goat (85:24)

Songs with Outdoor Appeal

Now all the Woods are Waking (85:6)

Waltzing Matilda (94:106)

Peace of the River (61:27)

Song of the Open Air (61:38)

White Birch (61:54)

O Canada (65:152)

Don't Fence Me In

The Happy Wanderer (39:242)

etc.

Songs for the Trail

I've Been Working on the Railroad (85:9)

Swinging Along (85:27)

So Long (94:48)

Hiking (94:162)

Timber-r-r! (61:91)

Songs That Invite Children to Compose Quick Verses or Solutions

Oh the Deacon Went Down (85:14)

The Alphabet Song

Found a Peanut

Folk Songs

Sylvie (94:19)
Down in the Valley (85:17)
Cindy (85:25)
The Boll Weevil (85:26)
A Poor Lone Girl in Saskatchewan (85:58)
The Little Old Sod Shanty (85:71)
Ballad of the Frank Slide (85:92)

Songs with a Lead Voice

Amen (85:21)
On Top of Old Smokey (85:22)
Green Grow the Rushes (61:181)

Songs of Inspiration and Worship

This is my Father's World (85:29)
For the Beauty of the Earth (85:32)
Kum Ba Yah (94:12)
Praise Our Creator (94:35)
Heaven and Earth (94:176)
Taps (61:64)

Spirituals

He's Got the Whole World in His Hands (85:30)
Standing in the Need of Prayer (85:36)
Swing Low, Sweet Chariot (61:6)
Goin' to Shout (65:117)

Graces

Hark to the Chimes (94:91)
For Health and Strength (39:241)
Johnny Appleseed (39:241)

We Thank Thee Father (39:241)

Be Present Here . . . (39:241)

Other appropriate camp songs will be found in the Sing-a-long series, 4H song books, etc. Campers themselves are often an excellent source of new songs and will learn much about music if given the opportunity to teach others and to conduct the group.

2. Drama in Song:

a) Act out the song as you sing it.

b) Have actors perform while another group sings it.

The following kinds of songs are appropriate

Home to Our Mountains (94:138)

Donkey Riding (61:93)

Waltzing Matilda (94:106)

3. Make instruments out of materials available, e.g.

- a whistle from willow

- a leaf pressed between the fingers and blown upon to create a vibrating sound

- a drum from a hollow log beaten with two sticks, etc.

Use them effectively in combination for rhythm only, or as an accompaniment for dances or songs.

4. Imitate bird calls, bush sounds, etc. so as to show an understanding of timing, pitch, etc.

5. Make up your own words to well known tunes.

Topics such as a campfire, canoeing, bridge building, etc. could form the basis for the verses.

6. Songs that teach can also be created, e.g.,

a) The Water Cycle Song (102:track 3, side 1)

to the tune "The Grandfather Clock".

Heating by sunlight is the source of energy for all changes in the weather. This heat evaporates water from oceans, lakes and earth and changes it into water vapor.

The sun heats the earth and the oceans and lakes

And it causes the vapor to rise
As it rises it cools and condenses and makes

All the clouds that we see in the skies

All the clouds have been formed

'Cause the land and sea were warmed

And the vapor goes up with the air

And you know that water evaporates

When you see those clouds up there

Evaporation and Condensation

(The water cycle, the water cycle)

Followed by Precipitation

(The water cycle, the water cycle)

The never...ending...cycle is taking place

All the time and everywhere

The rain and the hail and the sleet and the snow

Falling down on the land and the sea

Fill the lakes and ponds and the rivers that flow

To the oceans continually

And the heat-giving sun

Just repeats what it's done

And the vapor goes up with the air

And you know that water can circulate

When you see those clouds up there

Evaporation and Condensation

(The water cycle, the water cycle)

Followed by Precipitation

(The water cycle, the water cycle)

The never...ending...cycle is taking place

All the time and everywhere.

b) How Do the Seeds of Plants Travel (101: track

6, side 2) to the tune "John Brown's Body".

A seed contains a tiny plant, a supply of food and a protective seed coat. The tiny plant is called an "embryo" and it is the part of the seed that will grow into a plant.

Verse:

Elm and Birch and Maple trees
 Milkweed and Dandelion
 Have seeds that travel with the breeze
 Travel, rain or shine
 Birds and other animals
 Pick fruit right off the trees
 And when they finish with the fruit
 Drop and scatter seeds.

Refrain:

Sailing, sailing, wherever the breezes
 blow
 The seeds of plants keep planting seeds
 Everywhere they go
 Sailing, sailing, are tiny seeds of fruit
 Some have wings and some have sails
 And some have parachutes.

Verse:

Squirrels bury nuts, we know
 And even little ants
 Will carry tiny seeds that grow
 Into great big plants
 When you walk the seeds of weeds
 Will often cling to you
 And there are seeds that travel by
 Plane and auto too.

Repeat refrain.

c) The Balance of Nature (101:track 7, side 2)

to the tune "Jamaican Farewell".

Verse:

If it weren't for the birds, remember,
 my pet
 The Balance of Nature would be upset
 The insects of the world would surely
 double
 And the people of the world would be in
 trouble.

Refrain:

The Balance of Nature must not be un-
 balanced
 The Balance of Nature should be understood
 If the Balance of Nature is ever unbalanced
 Whatever will happen will not be good.

Verse:

If it weren't for the snakes, mice would
 multiply
 And without the algae, the fish would die

The flowers and the fruits need pollination --
 And the Balance of Nature, consideration.

Refrain:

The Balance of Nature must not be unbalanced
 The Balance of Nature should be understood
 If the Balance of Nature is ever unbalanced
 Whatever will happen will not be good.

Spoken:

If too many trees are chopped down, we have floods and soil erosion and a reduced water supply. If too many plants are destroyed, the animals may not have enough food and oxygen. If too many animals are killed, the minerals and carbon dioxide that animals supply to plants will be diminished.

Repeat refrain.

Activities That Will Teach the Concepts of Physical Education

Although a degree of physical coordination, strength, agility and balance is required of each of us every day, we should be mindful of the requirements of activities not in our regular schedule. At camp children are called upon, often voluntarily, to expend much more energy than at school. The following activities can supplement other aspects of the program or can be included as part of them.

1. Be able to move to, and in harmony with, improvised instruments or songs.
2. Create your own mixer-type dances to known songs, e.g., "I've Been Working on the Railroad" (85:9) could be used as the basic tune with a skip step carrying the camper through a set of floor patterns that might include, circles, squares, lines, etc. and involve changing places with a partner.

3. Fitness is important in every aspect of our daily lives and children should not simply associate it with the ability to perform certain tasks. At camp, the camper may use muscles he doesn't normally use on the playground and for this reason, the teacher should be aware of the program implications for individuals and help them prepare for the experience. Teachers should also note the progress of each child during the experience and the appropriate limit of activity set as some individuals will fatigue more than others.

4. Ample opportunity will be available in the camp setting for both large and small muscle activity. Campers should be encouraged to use the available resources safely and yet creatively, e.g.,

- small streams for jumping, to swing across, build dams, etc.
- trees to climb, to swing from
- hills for climbing, rolling down
- hedges for leaping
- gates and fences for climbing, walking upon
- open areas for spontaneous games, etc.

5. Pioneer or Indian games may be learned and played. (98 and 35). Activities with a pioneer or Indian derivation could also be enjoyed, e.g.,

- horseshoes
- lacrosse
- archery
- riflery

6. Activities that are natural to the area, e.g.,
- tracking and stalking
 - casting and angling
 - ice fishing
 - hiking
 - mountain climbing, etc.

7. Planned activities suited to the site, e.g.,
- swimming and water safety
 - horseback riding
 - canoeing
 - rafting
 - sailing
 - snowshoeing
 - tobogganing
 - cook outs
 - bivouacs
 - skiing
 - cycling
 - + survival skills
 - water skiing
 - skin diving
 - orienteering

8. Some activities have many variations, e.g.,
hiking may be the basic action for e.g.,
- various trailing or stalking games
 - orienteering
 - scavenger hunts
 - look and listen trips

- identification games
 - observation games, e.g., Hold the Front
- (see 14, 88)

9. Many of the activities in the program require physical exertion e.g., splitting wood, gathering specimens, building outpost sites, etc.

10. Dances of the area may also be learned, e.g., square, folk, round, ethnic and Indian dances to authentic rhythms.

Activities That Will Teach Reading Concepts

As the camp program will focus mainly upon aspects of learning involving the actual outdoor environment, the student will need to take adequate notes while in the field, and delay his expansion of them until he returns to the site. For this reason the camper must use to best advantage those times during the day when books are at hand. Every camp program will offer small time blocks to campers which will allow them ample opportunity to (a) skim reference books, (b) pursue and verify facts, (c) sort information for relevancy and (d) test information for accuracy.

For this reason, a select yet adequate library should be available to the students. This library should contain a number of copies of dictionaries, related subject books, related fiction stories and resource materials in all its many forms. Included also should be their reader, especially as the "real" scene can do much to deepen a child's understanding and so prove to be a profitable review. For example,

should the class experience occur during the haying season how much better will they appreciate "Hill Farm" (56:10); or should their experience take them to the township of Lacombe or allow them to visit one of the monuments raised in his honor then the more meaning can be derived from the story of "Father Lacombe". (56:261)

Some books provide more detailed information than others, hence a variety of books will prove to be of more value to the child's experience with books than a quantity of perhaps one or two types. Campers should be encouraged to seek as much information as possible using all the available resources, but to do this efficiently, he should compile a list of headings under which information can be listed. These headings should be modified and enlarged as his research progresses.

For example, supposing a child brings an object to you. What pertinent questions could you ask which will give the child a composite picture or headings under which further research may be completed after leaving the field.

The following clues may help:

- a) What is the general habitat - where is it found?
- where does it live?
- b) What food would it eat or need?
- c) What is its comparative size?
- d) Does it have any enemies?
- e) What defence mechanisms does it have?
- f) What is its color - design?
- g) Is it edible by man?

- h) What form of reproduction does it have?
- i) Can it be used by anything or anyone else?

From the above clues the camper may decide on more specific items some of which are observable, others he may be curious about and so research the problem. As an example let us assume that the object is an animal.

- a) Does it have hair, scales, bristles or smooth skin?
- b) Is it warm or cold blooded?
- c) How many legs -- if any -- does it have?
- d) What kind of feet does it have?
Of what use are they?
- e) Where is its skeleton -- inside or out?
- f) Does it have a tail? What shape is it?
For what purpose?
- g) What is the shape of its head? Are there any distinctive features?
- h) Is it aquatic for any length of time?
- i) Does it lay eggs or give birth to live young?
- j) How does it move?
What pattern does it make?
- k) Does it make a sound?
Can you describe it?
- l) What effect does light and sound have on it?
- m) What food would it eat?
Where does it store it?
- n) Who protects the eggs and/or young?
- o) What kind of "home" does it have? etc.

Sources of information may be cross referenced and pupils learn the discipline of adherence to the purpose of the moment. For example, if seeking particular information, pursue it until answers are complete; or if perusing, a more leisurely pace of reading is used and one may digress as interest is aroused.

But to have a library available to students is not enough. Individual attention is as important in the camp setting as it is in the classroom. Teachers should be cognizant of the effect of the environment on their pupils and set a tone for reading which is in appropriate accord.

Further, teachers should continue work in the "building of essential habits and skills" (1:51) lest children associate these with a classroom only and therefore fail to take advantage of each learning opportunity as it occurs in their lives. Such points might be:

- a) reminding children of word lists and how the word is used
- b) helping campers understand a story as it applies to the camp experience
- c) using their "skill in following directions
skill in taking notes
skill in classification
skill in outlining
skill in summarizing" (1:22)

Often opportunities to employ the many "related language experiences" (1:53) occur in the camp setting. For example, note taking in order that further research will

validate or negate a new fact or idea. Supposing a child has heard a scrap of information from a resource person at camp that requires substantiation, or the idea taken from the story "Quills" where it says ". . . he usually faced the enemy with his tail." (56:98) For verification of this fact, the reader could consult (29:355).

Oral reading is another aspect of the child's learning experience and at camp he could have this opportunity by becoming:

- a) the master of ceremonies during a campfire program.
- b) the narrator of his group's play.
- c) a member of a ceremonial order.
- etc.

Opportunity to read at camp should allow for all types and interests of readers. Stories both fact and fiction which will give information about:

- a) The area they will be visiting, e.g., ranching areas, forested areas, market gardens, mining or trapping areas, history, etc. -- for example (96).
- b) The people of the area either past or present, e.g., farmers, apiarists, ranchers, Indians (98:26) squatters, trappers, loggers, etc.
- c) The secondary products or processes -- books that will help the child associate his experience at camp with a raw product and his experience with a much changed product at home.

The following types of books are also in demand in a camp library:

1. Poems that are applicable to camp. Many poems listed in the reader are most suitable, e.g., "The Sandhill Crane" (56:399), "Very Tiny Creatures" (56:405), and "The Saws Were Shrieking" (56:421), etc.
2. Legendary Tales of the Indians and Pioneers of the region, e.g., "The Map Maker". (97)
3. Books that explain, for example, Indian symbols and artifacts, e.g., "Blackfeet Crafts". (31)
4. Books of interest and extension as, for example, weather (52), aquatic life (73:120) or hand crafts (95, 35), etc.
5. Stories, poems, etc., for leisure reading that contain information associated with the program or awakened by it, e.g., "Falling Stars" (40:208) and "Cause for Curiosity" (40:384)
6. Song books.
7. Any diagrammatic or graphic representations that will enhance the program, e.g.,
 - a) maps of the area -- topographic, forest cover, soils, etc.
 - b) charts illustrating, as an example, differences and similarities of animals, clouds, etc.
 - c) tables showing animal populations for the area during the different seasons.
 - d) graphs showing temperature, precipitation, cloud cover, etc., for the site. etc.

Activities That Will Teach Science Concepts

In the natural environment many learnings are possible; the variety and depth of such being infinite. Therefore, the activities have been grouped loosely under broad headings. These are but a few of the ideas capable of imparting knowledge, interest and stimulating speculation. The limits to which these activities can extend are the intellectual capacities of children (pages 11-13), the aims, objectives (page 81) and conceptual learnings (page 82) of this subject but the most limiting factor of all is that of the ingenuity of this writer. The practitioner should embellish, modify, and enlarge these lists in order to equip himself for the challenge of questioning, skeptical but enthusiastic students.

1. How does an animal show fear? e.g., excess activity, retreats, trembles.
2. What different foods do different animals eat? e.g., elk and a buffalo, minnow and a trout, frog and a lizard, flicker and a robin.
3. What is the animal's body position for eating?
(3:301)
4. What animals store food and where? e.g., in a hole? in pouches in their bodies?
5. What actions do you think the animal has learned and what seems natural or unconscious to him?
6. Can an animal change its body position and still travel? Does it change its posture when it does this? What methods of locomotion are used?

7. What kinds of houses do animals construct?

8. How many different types of animal eyes can you see, e.g., eyes that act independently of each other, mosaic type eyes (3:315), "camera" type eyes, (3:315), eyes that see in the dark better than in light.

9. How can animals alter or maintain their body temperature e.g., a lizard, a deer.

10. What senses do animals have?

11. Where do animals lay eggs and why?

12. What protection do eggs have?

13. How many eggs are laid e.g., fish and a bird.

Why the difference?

14. What physical and behavioral changes are evident during the mating season, e.g., changes in plumage, calls, dances, etc.

15. How can animals find their way around? e.g. bees to nectar and the hive, squirrels, birds (give an example of a bird that returns to same nest each year), rabbit.

16. Hibernation and migration: who does what and why? What evidence is there of these activities?

17. What evidence of animals is there in this area? Tracks, signs of grazing, droppings, skeletons, feathers, eggs, homes, webs, etc.

A. Aquatic plants and animal life

1. Is there any evidence that the pond or lake is a temporary feature?

2. Does the water level change? When? Why?

3. Can you make an ecological map
 - showing contours of depth?
 - zones of plant and animal life?
4. What is the character of the water
 - temperature?
 - salinity?
 - clarity?
5. Discover the sorting action of the water, sand, gravel, mud.
6. Look for and collect (if possible) evidences of the power of the water.
7. Discover different forms of water life. Compare and contrast them.
 - under boulders?
 - under ledges?
 - in still water?
 - in rapidly moving water?
8. What evidences can you find of plant and animal matter in
 - gravel beds or bars?
 - in flood plains?
 - in oxbow lakes?
 - in rivers?
 - in swamps or bogs?
9. What differences do you find in plants at the edge of
 - a marsh?
 - a lake?

- a beach?
 - a stream?
10. What reasons could there be for such differences?
11. Of what importance is the river to this area?
12. How has the river changed since it was considered young?
13. Follow a river or stream to its source.
- what difference can you see in the speed of the water?
 - the path it takes?
 - the land forms around it?
 - the size of the materials in it?
 - the width of the water?
14. Can you find any animals that move opposite the current?
15. How many different kinds of animals can you find
- that live in shells?
 - that have an internal skeleton?
 - that live or rest on top of the water?
 - that live for only part of their lives in water?
16. How many different plants live entirely under the water?
- separate those that have roots in the sand or mud from those that float freely.
17. How many different kinds of plants can you find that have their leaves floating on top of the water?

18. What colors can you find in the water, the aquatic plants or animals? Why is there color in these things?

19. Can you find any eggs in the water or attached to the bank?

20. What foods are available for aquatic animals?

- water snails?

- small fish?

- game fish?

21. What is meant by a food chain? Can you find examples that could form part of a food chain?

22. Watch a fish -- how does it swim? What body parts does it need?

23. Find examples of things that would use up the oxygen in the pond or stream.

B Botany

1. Flowering plants - parts of the plant?

- developing seeds?

- growth?

- environment?

2. Fungi

- parts of the plant?

- how does it reproduce?

- on what does it grow?

- environment?

3. Aquatic plants - what differences are there compared to a fungus or a flowering plant?

- how does it reproduce?
- how does it obtain its food?
- why does it live in a watery environment?

4. What are the differences between flowering and non-flowering green plants?

5. What activities would a tree take part in in a day?

6. What are the differences between lichens and mosses?

- of what benefit to nature are these plants?
- what kind of environment can these plants live in? Why?

7. What kinds of plants would provide food for:

- a) land animals?
- b) amphibious animals?
- c) aquatic animals?
- d) man?

8. Determine the history of a meadow

- is it natural?
- was it once covered by forest?

9. What plants prefer to grow in a meadow?

- in a forest?

10. What plants prefer to grow in a bog community - why?

11. What plants prefer to grow in a swamp community - why?

12. Swamps and bogs and their communities differ from area to area - why?
13. Some plants are known as insectivorous plants.
 - where are they found?
 - how and what do they do?
14. What differences would you find in plants at different mountain elevations?
15. What are the effects of exposure to sun, wind and rain on plants?
16. Why are plants grouped together in families? Can you recognize any family groupings?
17. What adaptations of plants have had to be made because of environment?
18. Reproduction in plants -
 - a) New plants from parts of older plants?
 - b) How do flowering plants reproduce?
 - c) How do plants without flowers reproduce?
19. How are seeds formed?
20. How are seeds dispersed?
21. How do plants protect themselves from
 - insects?
 - sun?
 - animals?
22. What happens to plants when they die?
23. Of what use are non-green plants to
 - men?
 - to the plant world in general?
24. What kinds of forest trees can be found here?

25. What is the relationship between forest trees?

26. What evidence of forest succession can we find?

27. Of what value is the forest to man?

28. What is the relationship of forests to wildlife, soil and water?

29. Forestation - what does it mean?

- how is it carried out?

30. If we were to consider implementing a reforestation program here, what would we need to do?

- mapping, establishing boundary lines

- making a master plan

- tree planting - areas to plant

- choice of type & obtaining trees

- ground preparation

- how to plant

- future care of young trees

- Christmas tree production

- tree protection: disease and insect control

- thinning and pruning

- harvesting

31. Try to identify a hardwood tree:

32. What differences can you find in leaves, bark, shape, seeds and flowers of trees?

33. Make a collection of leaves and of seeds to show differences.

34. List the economically valuable trees in your area and map them onto a local map.

35. Can you find a tree stump and determine its age when cut?
- in what condition is it now? why?
 - did it grow after it had been cut?
36. Can you find a scarred or deformed tree?
- what has caused the scars or deformity?
 - how has the tree overcome the problem?
37. Compare trees that are growing close together to those in the open.
38. Can you find some or all the colors of the rainbow in the plants around you?
- does color have any particular significance to the life of the plant?
 - compare the need for colors in flowers and colors in leaves.
 - why is green coloring important to plants?
39. Compare the kinds of trees growing in different areas, e.g., along riverbank or by the lake to those on a hill, in a meadow, etc.
40. What different kinds of root systems can be found in the plant world?
41. Make a list or collection of what grows on trees.
42. Make a list or collection of what lives on trees.
43. What is a wild flower?
44. What are Provincial flowers?
- where does our Provincial flower grow?
45. Why do some flowers have a perfume?
- smell different kinds of flowers.

46. What are differences in texture of the stems and leaves of:
- desert-type plants, etc.
 - forest plants, etc.
 - aquatic plants, etc.
47. Taste the sweetness or sourness of various blossoms.
48. What protective weapons do plants have?
49. Observe and compare the size, shape and color variances in the same species of plant.
50. Identify some of the uses of plants.
51. What do the following have in common:
- a) moss?
 - b) fern?
 - c) grass?
 - d) a flowering plant?
52. What differences do they have?
53. Find some places where non-green plants are growing.
54. What colors can you find in non-green plants?
55. Can you tell how old a shelf mushroom is? Find one and, without disturbing it, work out its age.
56. How do moulds and fungi reproduce?
57. Find some twigs that tell you they were new last spring.
58. In the rings of a felled tree, can you find any evidence of hardship for the tree?
59. Some rings are light and some are dark, why?

60. Can you tell the age of an evergreen without cutting it down? Find a young tree and see if you can work out its age.

61. Different trees have different shapes. Look at the twigs and branches and see if you can work out why? Which trees have the best economic value? Why?

62. What are the characteristics of the local trees?

63. What forces influence growth in the forest? e.g. "soil, precipitation and water, temperature, humidity, wildlife." (92:6)

64. Can you find any evidence of destructive forces within the forest: e.g., diseases, e.g., fungi (rot), mistletoe, rust, etc., insects, fire, animals, weather.

65. What evidences of plant succession can you find in communities?

66. Where are the lumber industries located? Why?

67. Collect two products from trees, e.g., maple sugar, gum, paper, etc.

68. How would you recognize a healthy tree? An unhealthy tree?

69. What functions are performed by the bark, sapwood, the heartwood?

C. Rocks and fossils

1. Make a rock collection as to classification and name of rock, (sedimentary, metamorphic, igneous) or according to color, fracture, etc.

2. Identify rocks native to the area.

3. How did rocks not native to the area become located in the area?
4. Observe the rock strata.
5. Observe the flood plain.
6. Look for various kinds of fossils.
7. Discuss how fossils are formed.
8. Identify kinds of fossils and determine their possible age.
9. Erosion of land surface in general and rock in particular.
10. Evidence and significance of glacial action.
11. Collection of mineral bearing rocks and their identification.
12. The relationship of rocks and minerals to soil, water, plants and animals.
13. Land features - now and in the future. How and why will this occur?
14. Rock structure.
15. The geological history of an area.
16. Economic value of rocks and stratas
 - a) oil
 - b) water
 - c) mineral
 - d) coal
 - e) lapidary
 - f) gas
17. Look for rock breakdown from various causes, e.g., chemical by-products, erosion, wind, water, glacier,

rock on rock, roots, water, freezing.

18. Ways soil is aerated and fertilized: man induced by tilling, etc., animals, trees falling, etc., death and decay, microorganisms, insects, etc.

19. What causes rocks to change?

D. Soil and water conservation

1. What land forms are around us?

2. Is there any evidence that these land forms are changing?

3. Of what is soil composed? Generally - broken rocks, minerals, organic matter, air, water, specifically local soil characteristics.

4. What can you find in soils? e.g. "colour - organic matter; texture -- clay, loam, sand, etc.; structure or shape (size of particles) fertility - (determined by tests)" (15:1) "root activity - plant nutrients - moisture holding capacity - permeability." (15:3)

5. Build a soil profile in miniature. e.g., "top-soil, subsoil, hard-pan or impervious layer, bed rock." (15:1)

6. What is causing erosion?

7. What types of erosion can you identify? e.g., "gully, sheet, stream bank, wind erosion." (15:2)

8. What methods of soil conservation are to be found or could be put into effect? "crop rotation, contour farming, strip cropping, terracing, grassing of waterways, gully control, woodland management, range management." (15:2)

9. What are the sources of water? "primary source, water cycle, local water supply" (15:3)
10. In what ways can water conservation be practised? "protection of sources, storage for future use, distribution, pollution (industrial wastes, sewage), purification, flood control vs. power, recreational uses." (15:3)

E. Tasks for learning aspects of conservation

1. How does nature balance herself? e.g. amount of water in air, stops erosion, survival of fittest, numerous eggs and seed but only a quantity survive, how animals contribute to plants, how plants contribute to animals, fire from lightening, etc.
2. How does nature protect herself? e.g. camouflage, bark, spines, prickles, ability to blow self up with air, poison.
3. The effects of different areas on plant and animal communities.
4. The effect of different seasons.
5. The adaptations of plants and animals to the environment.
6. The adaptations of plants and animals over the years.
7. What was this environment like (25 years) ago? What will it be like (25 years) from now? Why?
8. Evidences of pollution of water and air. What individual elements pollute air and water?

9. What happens after a forest fire?

10. What have the federal and provincial governments done to ensure adequate harvesting of wild animals and yet prevent extinction? Protected areas, hunting laws, fish hatcheries for restocking, etc.

11. Examples of reclamation - natural and man induced.

12. Methods of recording precipitation and prediction as to run off for water control measures.

13. What is the effect of gravity on weight, e.g., at the camp site, at school, and on top of a mountain?

14. Try boiling a billy of water at camp and another on top of a mountain. What would cause the difference in the length of time each took to boil?

F. Examples of activities for teaching concepts of light and sound

1. Can you tell the time by the sun?

2. Using triangulation, can you determine the height of a flagpole, a tree, a bridge, etc?

3. By realizing the effect of parallax can you analyze your camera and the results of your prints?

4. Analyze the individual instances of reflections and explain it in your own terms, e.g., when surface is regular, when surface is irregular.

5. Examine examples of refraction, e.g., the visual effect of a "broken" reed.

6. Note the reflection of sun on various kinds of surfaces and on particles in the air, e.g., rainbows, sunsets.

7. As the sun sets, be aware of the last places the sun's rays strike and the straight line effect of the sun's rays penetrating a forest.

8. From specimens around you, can you determine what colors are absorbed and what colors are reflected from white light?

9. What are you doing as you skip stones on the surface of water? What happens and why?

10. From a bridge, drop rocks of various sizes into the water and time each fall. What do your results indicate?

11. Note sounds that travel through the bush, e.g., the camp bell as heard at different points in camp, the ringing of an axe, a water fall, etc. Estimate the distance between the sound and yourself. What could alter the clarity of the sound?

12. Using sonar equipment - chart the depth of a lake over a given distance.

13. Produce echos and try to determine what physical features causes the sound to recur.

14. Find examples of luminescence, e.g., fireflies, phosphorous in water, etc.

15. Note the working of a reflecting telescope through which you can view the stars.

G. Learnings associated with weather

1. What causes a rain storm?

2. What other aspects of storms do we see? Can you explain them?

3. How do these interact with each other?

4. What effect can each aspect, e.g., lightening, rain, hail, snow, etc., have on the earth? References (52) and (4) offer more problems for children and answers to many of their questions.

H. Activities involving astronomy

1. In what direction does the sun move across the sky?

2. Is there any evidence of the effect of its direction on the plant life in a forest? an open field? a wooded area? why?

3. Can you track and record some well known stars in the night sky?

4. Observe a star through a reflecting telescope. Why does it have to be adjusted regularly?

5. Can you find the U.S. and Russian satellites? Which is which?

6. Draw a large circle on the ground and take two readings with a compass on one object but from different points on the circle. Do this for a number of objects of varying distances from the circle, e.g., a child, a fence post, a mountain.

7. Apply activity 6 to the stars.

8. Use triangulation to solve the problem as well.

9. Watch for shooting stars.

10. Try photographing the night sky with a long exposure.

Activities That Will Teach Social Studies Concepts

The Grade VI curriculum in Social Studies does not lend itself particularly to an outdoor camping experience in this province. But we would be remiss if our philosophy of education did not allow us to capitalize upon the educational opportunities afforded by a camp setting, albeit reinforcement of knowledge from earlier grades: for example

Grade I Animals and Their Homes (23:27)

Grade II Autumn and Spring (23:28)

Grade III Indians - Primitive Culture (23:28)

Grade IV Pioneer Life and Alberta at Work (23:29)

Grade V Discovery and Exploration of Canada and
 Canada at Work (23:30)

The following activities then, may be of importance in a school camp program.

1. Trips to: e.g., A deserted or abandoned farm. This experience could yield answers to the following questions.

- What local history can be found here?
- What are the conservation problems?
- What was this land like when the settlers arrived?
- Where did the settlers come from? When? Why?
- What land clearing problems did they encounter in order to make the land productive?
- What did the settlers grow and graze?
- From where did they obtain fuel and water?

- How did they store and prepare food during the summers and winters?
- Were they good or poor farmers in the way that they cared for the land?
- Locate the areas for crops, gardens, pastures, etc.
- Estimate when it was last farmed.
- Why was the farm abandoned?
- What is happening to the abandoned fields?
- What plants are now growing in the fields?
- If the land is left untouched, what will be its eventual condition? (consider plant succession)
- How could man speed the recovery of the land?
- How did the farm affect the wildlife of the area? etc.

2. Questions could also be asked about ghost towns, industrial communities, rural and urban areas, gravel pits and quarries, excavation sites, Indian village sites or ceremonial grounds, mining areas, lumber camps, local history from monuments, old bridges, log cabins, battlefields, graveyards, reservoirs, dams, filtering plants, etc. Assignments might include the determining of the principal source of income for an area, recognition of economic and social development patterns for an area, local production of e.g., maple syrup, artifacts, souvenirs, etc.

Activities That Will Teach Spelling Concepts

The following activities are included as they are significant to the education of the child yet not necessarily taken formally in the camp setting. It is assumed that as these areas arise the teacher will capitalize upon the learning moment with particular emphasis on words appropriate to the experience.

1. Use of the dictionary (77:7) for the following reasons: word meanings, "what part of speech it is", check the spelling, syllable divisions, pronunciation, word origin.

2. It is understood that each child will know the meanings of the words he is using, and understand words with the one pronunciation but two different spellings. (77:10) e.g., weather and whether)

3. "Words about food and drink" (77:12) include nouns, adjectives, etc.

4. The suffix - "ly". (77:14)

5. Words used in games played by children (77:16)
"When a word ends in e, drop the e before adding an ending which begins with a vowel". (77:17)

6. The suffix "tion". (77:22)

7. "One sound, two different spelling - soft c"
(77:24) e.g., spruce, space.

8. "Words about Government". (77:26)

9. "One spelling - several meanings". (77:28) e.g., well, brand.

10. "Two-in-one compound words" (77:30) e.g., flash-light, photo-graph (two short words to make one word)

11. "Soft g" (77:36) "The sound of g followed by e or i in these words is called the soft sound of g. The sound of g followed by a consonant or other vowels is called the hard sound of g". (77:36) e.g., baggage, (hard and soft), ledge (soft).

12. "Prairie Roads" (77:38) e.g., paved, slippery, elevator, ferry, etc.

13. "A pair of Prefixes" (77:40) con or com and ex, e.g., compass, contour, excitement.

14. "Words about clothing" (77:42) e.g., wollen, jacket, zipper, blanket, etc.

15. "A busy combination" (77:44), see ". . . how many different sounds you can find which gh helps to spell." (77:44), e.g., bough, rough, neighbor, etc.

16. "Two uncommon letters" (77:50), letters Q and Z are least frequently used of all those in the alphabet, e.g., organization, zero, blaze. Remember U follows Q in the English words, e.g., square, mosquitoes.

17. "You speak in tongues" (77:52) origins and derivations e.g., camera from Latin (Kamara), beauty from French (beauté).

18. "Cooking and Baking" (77:54) e.g., toast, spoon, syrup, etc.

19. "Words that describe" (77:56) e.g., polite, swift, tame, tanned, etc.

20. "Many ways to spell long E". (77:58) e.g., screen, machinery, complete, lead, keel, pier, etc.
21. "A visit to the east coast" (77:64) Some of these words can be used, e.g., mist, spoil, visitor, etc.
22. "OU - many sounds - one spelling". (77:66) e.g., amount, cough, poured, course, surround, etc.
23. "Words about your lessons". (77:68) e.g., library, memory, choose, texts, etc.
24. "Measuring and counting" (77:70) e.g., hour, divide, none, radar, average, target.
25. "Weddings". (77:72) e.g., guest, Tuesday, news, introduced, sandwiches, etc.
26. "Getting things done". (77:78) e.g., torn, satisfied, float, agree, heard, vanished, ridden, etc.
27. "U and OO". (77:80) e.g., manual, mule, lose, broom, moose, secure, etc.
28. Property (77:82) e.g., rent, shelter, timber, rotten, whittling, etc.
29. "Another Dictionary Unit". (77:84) e.g., ashes, acquainted, car, raisin, calves, etc.
30. "Where, When, How?" (77:86) e.g., toward, perhaps, farther, properly, etc.
31. "Gardening Words". (77:92) e.g., shower, orchard, hawk, control, spider, branch, etc.
32. "Doctor at work." (77:94) e.g., instruments, knees, scissors, bleeding, etc.
33. "Building words". (77:96) "Each word . . . can be used as a starting point for learning how to spell other

related words". (77:96) e.g., part, appear, etc.

A. Spelling for science

Words pertaining to individual subject areas and words whose spelling or meaning cause difficulty should be kept by campers individually. Three subject areas are listed here.

For example: from Fischer et al. (33:385-397)

accelerate	data
aerobic	diagonal
amplitude	diffused reflection
anatomy	direction
angle of incidence	diverge
aperture	echo
aseptic	environment
bacillus	evaporate
botanist	fermentation
budding	filter
carbon tetrachloride	focal point
cell	fossil
cesspool	gravitation
chlorophyll	image
collide	infrasonic
compound	luminous
concave	microscopic
contamination	nautical mile (distance of
control	6,076 feet) (33:392)
crest	nucleus
crystal	organism

paramecium	translucent
photosynthesis	transmit
potential	transparent
power	trough
prediction	ultrasonic
protozoan	velocity
reflecting telescope	vibrate
refraction	water-borne
saprophyte	wavelength
spectrum	
spore	
static electricity	

From Brandwein et al (11:422-429), e.g.,

adapted	embryo
antenna	filtration
bacteria	fluid
behavior	fulcrum
caterpillar	fungi
cellulose	galaxy
chromosome	graft
cilia	habitat
classify	humus
comet	hypothesis
conductor	instinct
cross-pollinate	interdependent
diffusion	invertebrate
egg cell	larva
electricity	light-year

magnetic field	response
meteorite	secrete
metric system	solution
mineral	stamen
nova	stimulus
orbit	supernova
ore	temperature
pistil	tentacle
polled	vertebrate
pollen	volume
pressure	watershed
pupa	work
reservoir	

Knottmeyer et al (50:12, 81, 93, 99) for further examples.

B. Spelling for arithmetic

Knottmeyer et al include the following samples:

(50:3)

decimals . . .	budget . . .
thousandths . . .	debit . . .
inverted . . .	ratio . . .
cancelled . . .	angle . . .

(50:9)

lever . . .	dimensions . . .
fulcrum . . .	geometric
pulley . . .	rectangular
inclined plane . . .	triangular
resistance . . .	circular
	perpendicular

prism cylinder

sphere pyramid

Hartung et al would add such words as:

cube (44:26)	expenses (44:137)
volume	parallelograms (44:152)
cubic (44:31)	reciprocal (44:189)
parenthesis (44:47)	cancellation (44:197)
computation (44:92)	estimated (44:206)
solution (44:111)	frequency (44:257)
product	quotient (44:114)

C. Spelling for health

From Knottmeyer (50:37) such examples as:

juice	lettuce
hygiene	bandage

And Irwin et al adds:

spare	generating
mould	power
yeast	disinfectant
influenza	detergents
antibiotic	irrigation (48:16)
penicillin	hitchhike
pollen	electrocuted
vapour	insulation (48:18)
pollution (48:15)	environment
mannerism	isolated
prejudice	conflict
gesture	interaction (48:30)
	accusations

enunciate	standard
distinctive	inconsiderate
reassurance	expectations (48:33)
sophisticated (48:29)	tolerate
identify	ethnic (48:41)
hostility	

A NON COMPULSORY SUBJECT - FRENCH

Activities That Will Teach Concepts of French

Although not a formal curriculum subject area, the following activities could give campers an insight into the language. Activities might include:

1. Songs e.g., French Cathedrals (94:36)

La Cloche (94:61)

Pull on the Oars (94:8-supplement)

Allouette (61:59)

O Canada (65:152)

2. The occasional meal in French. This would require charts placed on the walls with the French terms, used during a meal, printed on them, e.g., Thank you, May I have a slice of bread? Please pass the salt, etc. The grace could be sung in French. Communication should be predominantly in French.

3. Simple skits in French could be performed at a campfire.

CHAPTER VI

SOME OF THE ADMINISTRATIVE ASPECTS OF OUTDOOR EDUCATION

Pre Planning Stage

If, as an individual staff member, you have wanted your class to have this experience, then act. But to ensure that your effort will be rewarding to both yourself and your children consider the following steps.

1. As a teacher you must be convinced of the educational value of the experience you have in mind. As the instigator you will need to be prepared to:

- a) prepare for it thoroughly.
- b) convince others of its worth.
- c) carry the administrative responsibility.
- d) involve others indirectly affected by the idea.
- e) plan with, and prepare your class for, the experience.
- f) devote much personal time and energy to the project.

At this point in time Calgary is the only school board directly involved with outdoor education and able to shoulder much of the administrative load. All other schools offering this experience to sixth graders do so because of the individual teacher effort.

2. Discuss the feasibility of the idea with other staff members whose interests and talents make them prospective resource personnel.

3. Having thought through the philosophy, and with some general aims for the experience in mind as well as the group to be involved, confer with the principal about the practicality of such an experience. (To help you focus directly on some of the concerns see attached Charter, page 157).

4. At this point the principal may wish to be sure that such a project will be acceptable to parents. Therefore, a time lapse may occur in order to secure opinions through informal talks with parents or the idea may be presented to a Parent-Teacher Association meeting. With such information as these courses may yield, or perhaps before this action, the principal will approach the School Board.

5. In approaching the School Board the principal may need as much written information about the idea as you can gather. Some principals communicate by letter, others by telephone and still others are prepared to meet a board representative either on their own or with you as the potential organizer of the project.

6. Once permission for the project has been given, a choice must be made as to the group eligible to participate and the initial indication or such should be made known to the parents of those children.

7. From this point both the children participating and their parents should be involved in the planning. Refer

Appendix A (Page 181) for examples of the kinds of activities in which the class might participate prior to the experience.

(8) A Charter for Outdoor Education (12:10-11)

1. Education in the outdoors, through direct experience, is in keeping with the best that is now known about how the individual learns.
2. Today's living, with its large population centers and automation, has deprived many children and youth of contact with the land. Schools must, therefore, provide outdoor learning opportunities in order that they may renew this contact as a normal part of growing up.
3. The emerging community school -- the instrument for serving those learning and living needs of present-day society with which education has been charged -- makes maximum use of all community resources, including the out-of-doors.
4. Achievement of the purposes and objectives of this ever-changing institution can be completely realized only through a community curriculum -- the sum total of all learning situations provided by the many groups and agencies.
5. There is more emphasis on "creative education" that helps people find satisfaction -- many of them in the outdoors -- during the increasing amount of off-the-job time at their disposal.
6. Outdoor education is a broad term -- not a discipline nor a subject-matter field -- that includes those learning experiences indigenous to the natural environment and the skills, appreciations, and attitudes necessary for maximum satisfactions and enjoyment in outdoor pursuits.
7. Knowledge, skills, attitudes, and appreciation that are acquired in and for the outdoors are integral parts of general education and are included in appropriate places in many disciplines, school subjects, and activities.

8. Teachers should be equally competent to teach in and outside the classroom, wherever the environment is most conducive to the desired learnings.
9. Techniques and methods basic to good teaching are equally effective in both kinds of "classrooms," indoor and out.
10. There are many settings suitable for learning in and for the outdoors -- camps, parks, forests, farms, gardens, and open spaces.
11. All schools and community agencies charged with the responsibility for the education of children have available to them some type of outdoor setting suitable for learning.
12. Through cooperative planning at local, provincial and national levels, more adequate facilities, leadership, and equipment for outdoor education may be made available. This will secure more efficient use of the tax dollar by eliminating needless duplication of effort.
13. If all people are to come into full possession of their outdoor heritage, it is of paramount importance that there be inter-departmental and inter-agency cooperation at the local, provincial and national levels.
14. Some of the basic needs of youth, unmet by schools with traditional programs, can be satisfied by the community school. If this challenge is not met, it will become necessary, by default, for agencies other than the school to assume this responsibility.

As the program is firmed, equipment for making the experience a success should be assembled. Such equipment would depend upon the activities to be offered, the length of the experience, the facilities available and so on, but often quantities of inexpensive equipment can be borrowed from the children themselves or those in the community

willing to support the project.

Such items might include: small mirrors (tape bound edges with adhesive tape), magnifying glasses, plastic bags, old fish tanks or glass coffee pots, No. 10 cans with wire handles, glass jars of various sizes, mosquito netting, wire coat hangers, old fly screens, used tooth brushes, string, etc. School supplies of paper, pencils, scissors, glue, felt tipped pens, microscopes, etc. would also be needed.

Library books will be needed at the site and the school librarian may offer her help in this area. As well as resource books appropriate to the program areas, dictionaries and copies of a thesaurus would also be useful.

Various organizations within the community have resource materials available or will offer their services. For example, information is available from: the government meteorologist at the International airport, the various government departments, e.g., Lands and Forests, Fish and Wildlife Division, Agriculture, etc. Also local libraries, local museums of natural history, or historical societies both public and private e.g., the Glenbow Foundation will help. Local service clubs, zoos, forest wardens, game wardens, towns people, industries in the area, home economists, St. John Ambulance, Public Health authorities, the Department of Transport (for weather recording instruments), etc. will assist where possible.

The Calgary Public School Board offers an outdoor education increment credit course to teachers within its

system. The course is given by the senior personnel of its school camps. Part of the course is conducted on the actual campsite and covers various aspects of the program prepared for the children.

Public relations is a key factor to the success of the experience. Not only is it vital to keep the parents of campers informed, but also the staff at your school, the school board, community supporters, etc. The local newspaper will often publish items, photographs, etc. and assist would-be journalists with their preparations.

All the while the class needs to be oriented, in each subject area, toward the experience and this requires patient and systematic lesson development so that maximum benefit can be obtained from the actual camp.

(Turn to Appendix C, page 209 for a list of references pertinent to preparation and in-camp procedures.)

Post Camp Procedures and Testing Devices

Following the resident outdoor experience, post camp activities must be entered into. For example: final camp reports are to be written and circulated, fixing of the concepts learned at camp and building on the concepts learned there is undertaken and letters of appreciation to those involved in some way, directly or indirectly, need to be written along with budget balancing, and recommendations for next year, etc.

Outdoor education as a method of learning is not new, but resident school camps are new in Alberta. For this

reason the teacher is often required to submit some form of an evaluation of the experience as it has affected his pupils individually, and his class as a whole. This could be in the form of immediate responses to tests or may be a combination of tests and subjective evaluations over a period of time. It is assumed that some pre-camp testing may have been done in order to provide a comparison with results of post camp tests. It is well known that the responses of some children do not give a true indication of the value of the experience because of the competitive nature of such tests or the anxiety aroused by its presentation.

For these reasons then, a variety of testing devices should be used and examples of these appear below.

1. Questionnaires and/or interviews with parents will give an indication as to the differences, if any, noted in each child.

2. Information from unsolicited letters received by the teacher or school authorities etc. can indicate strengths and weaknesses of the program as it affected individual children.

3. The fact that a child can give an oral report to a sponsoring service club, or school assembly may be a milestone for him, while improved clarity and organization of thought may be the hallmark of progress in another.

4. Debates using topics such as: To camp or not to camp next year; Science and Language should share equal emphasis at camp; etc.

5. A diagram or picture with numbered parts, the answers to which can be written in at the key.

6. Sentence completion type tests, e.g., The Latin name for a "new" star is (Nova), or "A (Homonym) is a word that sounds the same as another but is spelled differently.

7. Matching-type tests where the meanings of words appear in one column while the jumbled answers appear in another.

8. Give lists of words or phrases that tell you something about each of the following, e.g.,

a fact travelling

a circle grass

offspring swamp, etc.

9. Crossword puzzles composed of key words that can be completed at leisure.

10. Using diagrammatic sketches, have children describe what is happening -- e.g., a sketch of a "broken" reed in water.

11. Have mimeographed a complete story or paragraph from which key words are missing.

12. Have individuals or small groups complete murals, depicting their experiences, using natural materials.

13. The acceptance of articles, reports, etc. for publication in the local newspaper.

14. The acceptance, for printing in newspapers, of photographs taken by campers.

15. The noting of prizes or commendations won by camp participants in community contests as a result of the

experience at camp, e.g., art shows, etc.

16. The pursuit of some aspect of a camp activity which becomes an acceptable entry to a science fair.

17. The ability to score more highly in games such as scrabble.

18. The ability to decipher information from a topographical map. Questions such as: a particular town's elevation, topographical features within five miles of a given town, transportation systems servicing a town, listing the features within a town, e.g., church, school, post office, etc., relative size of a town compared to another, etc., could be asked.

19. Test for recall of key facts. e.g., (17:T38-40).

20. From a given idea, e.g., the final campfire, have children list the adjectives associated with this activity:

21. Using all the adjectives listed in 20, write a composition which would let a reader picture the complete scene even though he was not in attendance.

22. Display one aspect of your new knowledge using labelled specimens, reference books, etc. Topics might include "Pines and their value to man", "Mistletoe -- a scourge of the forest", "Handcraft ideas", "Shooting stars or satellites?"

23. Check the specially prepared camp work books for: adequacy in note taking, accuracy of facts, drawings from nature, e.g., cloud formations, animal prints, etc., and independent work, e.g., additional facts, illustrations, etc.

24. Check your own skeleton notes, recorded at camp, of individuals and their reactions. These could be both subjective and objective, though the distinction should be noted at the time of writing, e.g., Observations made when campers were washing up, enjoying a break in the formal program, dressing a minor wound, etc.

25. What signs of change are evident in each child? For example sociological or attitudinal changes. For further information in both these areas refer (39) for actual test questions and procedures for their statistical analysis.

26. To complete the following puzzle, follow the rules listed below.

1) Circle the words that you can find in the above puzzle. Remember the words may be horizontal, vertical or diagonal to the left or right; sometimes spelled up the diagonal, and sometimes down.

2) Before the puzzle is complete you should have included all the letters at least once except for Z (this letter is not included in any word).

3) Beware, some words identify parts of a whole object. Some words have been repeated.

4) Write out all the different words you can find.

B I R C H T A M A R A C K P O P L A R
 L A R C H O O I S Z L E A F G A L L E
 U E R Z A S A S P E N D O G W O O D D
 E L M K S A P T E I E A P P I N E E O
 S M A L D E R L N E N R M E L M Z R A
 P O P L A R M E S Z D E A A L D E R K
 R F L O W E R T R E E S W O O D Z M M
 U C E D A R B O U G H Z S A W O U O U
 C O N E P I N E S A P G M S A G Z S S
 E V E R G R E E N C N A A P L W A S H
 F E R N A L D E R R A L P E N O A K R
 I V Y A L D E R E G A L L N U O A E O
 R Z Z B L E A F F P I N E A T D P K O
 L B F R B L A C K P O P L A R I E L M
 I A E A O M S B A Z S F E R N C Z Z C
 C R R N U O H A O A A S H U I O H O E
 H K N C G Z T R P E L M J Z V N N A D
 E A S H H U C K L E B E R R Y E Z K A
 N F I R J A C K P I N E J U N I P E R

27. A giant quiz. For this, groups of four children can work together to produce the answers. Number each group and have them put this number on each of the small pieces of paper given to their group. All can contribute to the answer, but one child can assume the position of "secretary" and another as "messenger". Quietly they can discuss the answer, write it down and deliver it to the front of the room

before a gong is sounded. Mark all correct answers on a large sheet drawn up for the occasion, i.e., group numbers listed vertically and question numbers listed horizontally.

Questions for this quiz can come from every area of the curriculum and from all aspects of the camp. Sample questions appear below:

1. How many buildings were there on the camp property?
2. In what direction is the camp from our school?
3. How many legs has a spider? (8)
4. Complete the proverb "A bird is worth two in the bush". (in the hand)
5. What is twice the half of seventeen? (17)
6. Which is correct? "The yolk of an egg (is/are) white? (neither, it is yellow)
7. What is it? The more you take from it, the bigger it gets? (a hole)
8. Who is Bertie Beaver?
9. List all the Provinces in order from the West to the East coast.
10. What is the Indian name for "hills of peace"? (Wetaskiwin)
11. Name two provincial flowers we found growing on camp property, and the provinces they represent.
12. Name the closest town and mountain to camp.
13. Name three mammals known to be living near the campsite.

14. Name five trees found growing on camp property.
15. If our bus held only 8 people, how many trips would it have to take in order to transport us to camp?
16. What color are peacock eggs? (Peacocks do not lay eggs)
17. Who wrote the poem "The Shooting of Dan McGrew"? (Robert Service)
18. Spell "reservoir".
19. If farmer _____ found all but nine of his 20 milking cows died, how many would he have left? (9)
20. What does the Indian word Athabaska mean in the name of the Athabaska River? (Where there are reeds)
21. Compute the following: Take the letters of the alphabet (26) add the number of apostles (12) subtract the number of blind mice (3), divide by the number of vowels (5) and multiply by the number of degrees in a right angle (90). (630)
22. In what direction would the smoke from the CPR dayliner blow in the train was travelling north at 40 MPH? (there is no smoke)
23. Write on your paper an "i" with a dot on top. (i)
24. Spell "chlorophyll".
25. What must be included in a registered brand? (a symbol and letters)

28. The game of "ants". For this activity the child must supply the missing word which ends in "ant". For example:

- a) This naughty ant absents himself from school. (truant)
- b) This ant can measure distance on the seas. (sextant)
- c) This ant is small and dried and good to eat. (currant)
- d) This ant has plumage of bright color. (pheasant)
- e) Behold, an ant of more than normal size! (elephant)

29. Supply the missing words that rhyme: e.g.,
A season of the year and a band player.
(summer, drummer)
A bottle stopper and a long legged bird.
(cork, stork)
A heavenly color and footwear.
(blue, shoe)

30. A child's original song which is, perhaps, shared with the class or the school.

These ideas are but samples of the kinds of activities which you, as the teacher, could use if altered appropriately to fit your class and its actual experience. Again, these ideas are limited to the experience of a few and new examples can come from the resourcefulness of many.

The activities themselves are capable of bringing new insight to both pupil and teacher alike. The child may capture a fact he has missed, respond in a new way, or with more enthusiasm. The teacher may be surprised at the scope of learning, both incidentally and formally, that has taken place. While the "test" may appear to examine and assess the child's knowledge, the teacher should be aware of the child's involvement, changes in attitude, ways of contributing to the group, etc. These observations may be far more meaningful than any score on a particular test sheet.

Therefore, the writer would encourage you, as a potential or dedicated user of this outdoor education method, to examine the literature in this area and, where possible, attempt to reduce the gaps of knowledge in this field by reporting your experiences, gathering information that will help to verify for Alberta, those findings published in the United States and Australia.

Areas Needing Research

1. The philosophy of outdoor education as it applies to elementary grades.
2. The objectives of outdoor education and guidelines for the development of objectives for each experience depending upon site chosen, season, physical limitations of the area, age group, etc.
3. The optimum use of and/or advantages of the following:

- a) The number of staff members and resource people required for each experience.
- b) Interest and enthusiasm of the staff members both directly and indirectly involved in the experience.
- c) A program emphasis.
- d) The particular physical facility chosen for the experience.
- e) The natural setting of the facility.
- f) The size of the group and the number of children per instructional staff member.
- g) The time of the year in which the experience is taken.
- h) The length of the outdoor experience.
- i) Finance.

4. General programming -

- administrative policies and details
- student involvement
- equipment, transportation, etc.

5. Programmed activities -

- pre-camp activities in the "classroom"
- during camp - activities appropriate to the location, intellectual level, etc.
- post camp activities - in a "classroom"
- preparation of a suitable workbook for on-the-site use.

6. Recruitment, selection and training of personnel

- pre-camp training

- in camp training
- summer session courses
- extension courses
- specialists and/or classroom teachers for the job

7. Sites available in each school district

- physical facilities
- geographic location and natural facilities
- for base camp centered programs
- for travelling camps
- for outpost camping

8. Administrative details

- transportation
- insurance
- camp site booking, etc.
- acquisitions
- development of the site for year round use
- school programming, etc.

9. Finance

- through grants and subsidies
- taxation levies
- budgeting, etc.

10. Evaluations

- in each of the areas of experience (as above)
- the effect on the total child of the entire experience
- fulfilling of objectives, etc.

Conclusion

It is possible for teachers to become lulled into a dependency upon the approved methods, texts and seeming rigidity of program in order to rank individuals against their peers. Yet John Ruskin (60:100) asserts that:

The weakest among us has a gift, however seemingly trivial, which is peculiar to him, and which worthily used, will be a guide to his race forever.

To watch children, individually and collectively, aspire to new heights, express enthusiasm, acquire a look of wonder and enlightenment and thrill to their own achievements; these are rewards not mentioned in a teaching contract and yet are indicative of the efforts of teacher and pupils alike. Outdoor education can offer a learning medium with infinite challenge through which each child can claim and demonstrate a sense of his own worth.

This thesis does not answer all the problems and questions associated with the programming of a school camping experience but if it has prompted a reaction it has served its purpose. The ideas cited here are but challenges to educators which demand modification, prompt new ideas, and progressions, etc. For through the hands of teachers pass the generation of tomorrow, entrusted as they are, with the moulding of the mental, physical, emotional, and spiritual growth of each child. Therefore exploration of all proven methods of learning, outdoor education being one, should be undertaken for the sake of the individuals whose privilege it is to learn.

BIBLIOGRAPHY

1. Affleck, Muriel A. Teaching New Worlds. Toronto: Ginn and Company, 1963.
2. Arnold, J. Shailer. "The Educational Possibilities of the Summer Camp Program" Unpublished Master's thesis, The University of Southern California, Los Angeles, 1928.
3. Barnard, J. Darrell, Delia Stendler, and Benjamin Spock, M. D. Science for Tomorrow's World 6 and The Teachers' Guide. New York: The Macmillan Company, 1966.
4. Battan, Louis J. The Thunderstorm. Toronto: The New American Library of Canada Ltd., 1964.
5. Becker, Howard S. (ed.) Social Problems: A Modern Approach. New York: John Wiley and Sons Inc., 1967.
6. Beckmann, Ann. "Glimpse of the West Thrills Ontario Students" Edmonton Journal. May 30, 1969.
7. Becker, Jerome. "The Relationship Between School Camping, Social Climate and Change in Children's Self-Concepts and Patterns of Social Relationship". Unpublished Doctoral dissertation, Teachers' College Columbia University, New York, 1959.
8. Board of Education. The Island School. City of Toronto.
9. Board of Education. Extending Education Through Camping. New York: Life Camps Inc., 1948.
10. Bode, Boyd. "The Role of Camping in a Living Democracy". Camping Magazine 14:12, February, 1942.
11. Brandwein, Paul F., Elizabeth K. Cooper, Paul E. Blackwood and Elizabeth B. Hone. Concepts in Science - Teachers' Edition 6. New York: Harcourt, Brace and World Inc., 1966.

12. "Brief on Outdoor Education". A brief submitted by the Outdoor Education sub-committee of the Edmonton Public School Board's Centennial Committee, Edmonton, October, 1966.
13. Brimm, Robert P. "A Study of Certain Problems in the Organization and Administration of School Camps". Unpublished Doctoral dissertation, The University of Missouri, Columbia, 1948.
14. Brown, Robert E. and G. W. Mouser. Techniques for Teaching Conservation Education. Minneapolis, Minnesota: Burgess Publishing Company, 1964.
15. Brown, Robert L. and Roy Johnson. "Soil and Water Conservation". A paper prepared for the School of Education Pilot Project in Outdoor Education. The United States Conservation Service and Oregon State College, 1959.
16. Bruner, Jerome S. The Process of Education. Cambridge: Harvard University Press, 1961.
17. Cahoon, Margaret C. Health Science - 6. Toronto: Doubleday of Canada Ltd., 1968.
18. Carroll, John S. "A Platform for Camping Education". Journal of Secondary Education 23:109, California, February, 1948.
19. Clarke, James M. Public School Camping. California: Stanford University Press, 1951.
20. Department of Education, Alberta. Curriculum Guide for Alberta Secondary Schools. Edmonton, 1950.
21. _____. Program of Studies for Junior High Schools of Alberta. Edmonton, 1963.
22. _____. Program of Studies for Elementary Schools of Alberta. Edmonton, 1965.
23. _____. Program of Studies for Elementary Schools of Alberta. Edmonton, 1968.
24. _____. Elementary Health. Edmonton: Government of the Province of Alberta, 1966.
25. Department of Education. The History of School Camping in New South Wales, Australia: Part I The Physical Education Bulletin, Number 5. Sydney, Australia, 1957.
26. Department of Indian Affairs and Northern Development. Indians of the Prairie Provinces. Ottawa: 1967.

27. Dimock, Hedley S. and Charles E. Hendry. Camping and Character. New York: Associated Press, 1929.
28. Dooling, Peter J. "Explorative Study of Factors Affecting Outdoor Recreation Demand of the Edmonton Adult Population, Alberta, Canada". Unpublished Master's thesis, The University of Alberta, Edmonton, 1967.
29. Drimmer, Frederick (ed.) The Illustrated Encyclopedia of Animal Life Volume 3. New York: Greystone Press, 1961.
30. Elwell, Alcott F. "The Summer Camp: A New Factor in Education". Unpublished Doctoral dissertation, Harvard University, Cambridge, Massachusetts, 1925.
31. Ewers, John C. Blackfeet Crafts. Lawrence, Kansas: Haskell Institute, 1945.
32. Ferman, Louis H., Joyce L. Kornbluh and Olan Haber (eds.) Poverty in America. Ann Arbor: The University of Michigan Press, 1965.
33. Fischer, Abraham S., Lawrence F. Lowery and Sam S. Blanc. Science: A Modern Approach Book 6 - Teachers' Edition. New York: Holt, Rinehart and Winston Inc., 1966.
34. Fish and Wildlife Division. Hunter Training Program Syllabus. Edmonton, Alberta: Department of Lands and Forests, 1964.
35. Fletcher, Sydney E. The American Indian. New York: Grosset and Dunlap, 1954.
36. Fox, Allan M. "School Camping - A Dynamic Aid to Modern Education". The Education Gazette, Sydney, Australia. September 1, 1962.
37. Gibson, H. W. "The History of Organized Camping". Camping Magazine, 18:13, January, 1935.
38. _____. "The History of Organized Camping". Camping Magazine, 18:28, February, 1935.
39. Gibson, William Garnet. "Evaluation of Outdoor Education Using Guttman Scales and Sociometric Analysis". Unpublished Master's thesis, The University of Alberta, Edmonton, 1966.

40. Gray, William S., Marion Monroe, Sterl A. Artley, Mary H. Arbuthnot, T. H. W. Martin, Mary E. Thomas and Florence E. Roliff. People and Progress. Toronto: W. J. Gage Ltd.
41. Hall, Roy T. and E. B. Broome. Grade 6 Language Journeys. Toronto: The Macmillan Company. 1960.
42. Hammerman, Donald K. "An Historical Analysis of the Socio-Cultural Factors that Influenced the Development of Camping Education". Unpublished doctoral dissertation, The Pennsylvania State University, University Park, Pennsylvania, 1961.
43. Hannon, Robert E. "Education is Living" St. Louis Post-Dispatch, May 23, 1948.
44. Hartung, Maurice L., Henry Van Engen and Lois Knowles. Teaching Guide for Seeing Through Arithmetic. Chicago: Scott, Foresman and Company, 1959.
45. Humphrey, Hubert H., Senator. War on Poverty. Toronto: McGraw-Hill Book Company, 1964.
46. Hunt, J. Intelligence and Experience. New York: Ronald Press, 1961.
47. Irwin, Frank L. The Theory of Camping. New York: A. S. Barnes and Company, 1950.
48. Irwin, Leslie W., Dana L. Farnsworth and Florence Genua Fraumeni. Choosing Your Goals - Teachers' Guide. Toronto: The Ryerson Press, 1968.
49. _____, et al. Choosing Your Goals. Toronto: The Ryerson Press, 1968.
50. Knottmeyer, William, Kay Ware and Neil M. Purvis. Basic Goals in Spelling - Teachers' Edition 6. Toronto: McGraw-Hill Company, 1966.
51. Kranzer, Herman C. "Effects of School Camping on Selected Aspects of Pupil Behavior - An Experimental Study". Unpublished Doctoral dissertation, University of California, Los Angeles, 1958.
52. Lehr, Paul E., R. Will Burnett and Herbert S. Zim. Weather. New York: Golden Press, 1964.
53. MacGregor, J. G. Blankets and Beads. Edmonton: The Institute of Applied Art Ltd., 1949.

54. Mason, Bernard S. Camping and Education. New York: The McCall Company, 1930.
55. McAuliffe, F. Joseph. "The Summer Camp: A Contribution to Education". Unpublished Doctoral dissertation, Boston College, Boston, Massachusetts, 1934.
56. McIntosh, John W., Muriel A. Affleck. New Worlds Toronto: Ginn and Company, 1962.
57. McKnight, Martha E. "Contributions and Potentials of School Camping". Unpublished Doctoral dissertation, Teachers' College, Columbia University, New York City, 1952.
58. Ministry of Education. Moving and Growing. London: Her Majesty's Stationery Office, 1952.
59. Moore, Harriet B. "A Plan for the Organization of Camps as an Integral Part of the Public School System of the City of New York". Unpublished Doctoral dissertation, Teachers' College, Columbia University, New York City, 1943.
60. Morgan, Barton. Golden Nuggets of Thought. Lake Mills, Iowa: Graphic Publishing Company, 1966.
61. Mursell, James L., Gladys Lipton, Beatrice Landeck, Harriet Nordholm, Roy E. Freeburg and Jack M. Watson. Music for Living Around the World Teachers' Book Six. Chicago: Silver Burdett Company, 1956.
62. Northway, Mary L. "Outdoor Education - A Second Chance". Bulletin of the Institute of Child Study Volume 27, No. 1 (104) Spring, 1965.
63. _____, and Barry G. Lowes (ed's.) The Camp Counselor's Book. Toronto: Longman Canada Ltd. 1963.
64. Piaget, Jean. "Cognitive Development in Children: Development and Learning". Journal of Research in Science Teaching Volume 2:176-186, 1964.
65. Pitts, Lilla Belle, Mabelle Glen, Lorrain E. Walters, Louis G. Wersen and Horace W. White. Singing in Harmony. Toronto: Ginn and Company.
66. Porter, Amy. "Open Air Schools". Colliers, 120:23 March 1, 1947.

67. Prunkl, William R., and Norman E. Lougheed. A Lifetime of Health. Toronto: The Macmillan Company, 1967.
68. Redl, Fritz. "Report of the Workshop on the Role of Camping in Education". Camping Magazine 14:69, February, 1942.
69. Riis, Jacob A. How the Other Half Lives. Studies among the tenements of New York: American Century Series, New York: Hill and Wang, 1962.
70. Rillo, Thomas J. "This We Believe: Outdoor Education". A Statement from the Outdoor Education Centre for Southern Illinois. Southern Illinois University, Carbondale, Illinois.
71. Rittenhouse, Charles. Language Comes Alive. Toronto: J. M. Dent and Sons, 1961.
72. Rogers, Martin. "Principles and Functions of Outdoor Education". Unpublished Doctoral dissertation, Syracuse University, Syracuse, New York, 1955.
73. Russell, David H., Doris Gates and Mabel Snedaker. On Story Wings. Boston, Massachusetts: Ginn and Company, 1962.
74. Scholes, Catherine. "School Camping in Canada". Canadian Camping Magazine, April 1954.
75. School City of Gary - Community School Corporation "Brief for Outdoor Education". Indiana: January, 1966.
76. Service, Robert. Songs of a Sourdough. Toronto: The Ryerson Press, 1962.
77. Shack, Sybil F., Robert F. Bornhold, K. H. D. Hall and Gordon F. Mann. The Macmillan Spelling Series 6 Teachers' Edition. Toronto: The Macmillan Company, 1962.
78. Sharman, Jackson R. "Camping, A School Responsibility". Phi Delta Kappan, 21:116-117, December, 1938.
79. Sharpe, L. B. Introduction to: Outdoor Education for American Youth. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1957.
80. Smart, Mollie S. and Russell E. Smart. Children, Development and Relationships. New York: The Macmillan Company, 1967.

81. Smith, Julian W., Reynold E. Carlson, George W. Donaldson and Hugh B. Masters. Outdoor Education. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1965.
82. Stack, Genevieve C. "An Evaluation of Attitudinal Outcomes of Fifth and Sixth Grade Students Following a Period of School Camping". Unpublished Doctoral dissertation, University of Oklahoma, Norman, 1960.
83. St. Clair, Janet. "The Education Curriculum Philosophy of a Select Group of School Camps". Unpublished Master's thesis, State University of Iowa, Ames, 1958.
84. Summers, C. L. M. Adventure Activities in Physical Education. Oxford: Basil, Blackwell and Mott Ltd., 1963.
85. Sur, William R., Robert E. Nye, William R. Fisher and Mary R. Tolbert. This is Music 6 - Teachers' Manual. Toronto: The Macmillan Company, 1969.
86. The Edmonton Journal, May 29th - 31st, 1969.
87. Vanier, Maryhelen and Mildred Foster. Teaching Physical Education in Elementary Schools. Toronto: W. B. Saunders and Company, 1968.
88. Vinal, William Gould. Nature Recreation. New York: Dover Publications Inc., 1963.
89. Wachowiak, Frank and Theodore Ramsay. Emphasis: Art. Scranton, Pennsylvania: International Textbook Company, 1965.
90. Ward, Carlos W. Organized Camping and Progressive Education. Nashville, Tennessee: Cullam and Ghertner, 1935.
91. White House Conference on Child Health and Protection. Report of the subcommittee on Summer Vacation Activities of the School Child, Section 111c, New York: Century Company, 1933.
92. Wick, Pat N. and Ranger DeBruin. "Forest Conservation". A paper prepared for the Pilot Project in Outdoor Education, United States Forest Service and the School of Education, Oregon State College, Corvallis, 1959.
93. Wiener, Morris. "Developing a Rationale for Outdoor Education". Unpublished Doctoral dissertation. Michigan State University, Lansing, 1965.

94. Wilson, Harry R., Walter Ehret, Alice M. Snyder, Edward J. Hermann and Albert A. Renna. Growing With Music Teachers' Edition 6. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1966.
95. Wood, Kerry. A Time for Fun. Red Deer, Alberta: Kerry Wood.
96. _____. A Corner of Canada. Red Deer, Alberta: Kerry Wood, 1967.
97. _____. The Map Maker. Red Deer, Alberta: Kerry Wood.
98. _____. The Medicine Man. Red Deer, Alberta: Kerry Wood.
99. Wrenn, Gilbert and D. L. Harley. "Time on Their Hands: A Report on Leisure, Recreation and Young People," American Council of Education, Washington, D.C., 1941.
100. Zahn, Willard D. "Educational Enrichment Through Outdoor Education". A Paper presented to the Pennsylvania Regional Leadership Conference on Outdoor Education, Marshall's Creek, Pennsylvania, May 10, 1961.
101. Zaret, Hy. "Nature Songs". Marais and Miranda of Motivation Records. New York: Argosy Music Corporation, 1961.
102. _____. "Weather Songs". Tom Glazer and the Weathervanes of Motivation Records. New York: Argosy Music Corporation, 1961.

APPENDIX A

ACTIVITIES FOR THE CLASSROOM

As the classroom teacher is the focal point about whom the outdoor project will revolve, it will be necessary to use those aspects of his personality and profession which will capitalize upon all facets of the learning experience including those inherent in the preparation. Such planning may begin prior to the commencement of the academic year.

Once classes begin it is the teachers' responsibility to orientate his program toward the experience and gradually increase and fix the focus of attention for his class. The general statement of activities listed below could be used as a guide to classroom activities which prepare youngsters for the adventure.

Arithmetic

1. Prepare a Camp Budget
2. Cost of food
 - a) retail
 - b) wholesale
 - c) grower or manufacturer
3. Noting of prices of sweets, etc. in local stores
4. Preparation of price tags and cash box for canteen
5. Purchasing of supplies

6. Operating a realistic bank, cheques, etc. (for collection of camp fees)
7. Requisitioning for supplies and equipment
8. Preparation of inventories and stock lists
9. Bookkeeping

Art

1. Printing of class letterhead upon which all official correspondence is written.
2. Printing of note paper to be used at camp.
3. Expression of their interpretation of the camp site from a word picture in
 - a) paint
 - b) crayon
 - c) chalks or pastels
 - d) charcoal, etc.
4. Pictures suitable for the advertising of the camp
 - a) window displays
 - b) bulletin boards
 - c) brochures, etc.

Manual Art

1. Making of bulletin boards
2. Making of birdhouses, etc.
3. Care and use of tools
4. Ways of storing tools and equipment at the site

Health

1. Types of heat for cooking and warmth

2. Outdoor kitchens - equipment needed
3. Cooking for large groups - organization and utensils needed
4. Quantities of food, cleaning equipment and supplies for the camp period
5. Ordering of these supplies
6. Packing and transportation of supplies
7. Storage of food and equipment
8. Ordering from local suppliers -- for fresh foods
9. Food preparation in the out-of-doors
10. Table settings, good manners, table conversation
11. Nutrition
12. Menus
13. Sanitation
14. Experience at being hosts and hostesses while at home in preparation for camp
15. Domestic chores
 - a) bed making
 - b) when to dust and sweep and how
 - c) table settings to be used in camp
 - d) the hygienic aspects of cabins, dishes, etc.
16. Desirable habits
 - a) of eating
 - b) of sleeping and resting
 - c) of exercising
 - d) of bathing and hand washing
 - e) of clothes changing

- f) of good grooming
- 17. Working and Planning together
 - a) in small groups
 - b) as a class at school
 - c) interaction between individuals
- 18. Group dynamics
 - a) sharing
 - b) taking responsibility
 - c) respecting individual differences
 - d) respecting individual rights, property
- 19. Setting the atmosphere
 - a) child needs to feel respected
 - b) child needs to feel valued
 - c) child needs to feel "at home" and a part of the plan
- 20. Safety
 - a) through knowledge and skill
 - b) first aid training

Language

- 1. Vocabulary
 - a) additions of new words related to the expedition
 - b) spelling and meanings of new words

2. Preparation
 - a) a camp work book or handbook to be printed and taken to camp
 - b) through compositions, of the mental attitude of the youngster for the trip
3. Letters
 - a) written to landowners asking permission to pass through their property
 - b) to business firms requesting catalogues, price lists, etc.
 - c) to agencies involved in the experience
4. Business forms
 - a) contracts of residency
 - b) order forms
 - c) inventories
5. Experience with out-of-doors literature
 - a) pre-reading on topics
 - b) collecting of a set of books suitable for reference work while in the camp setting
6. Talks
 - a) to assemblies telling of plans
 - b) to agencies and clubs telling of hopes and dreams
7. Reference work
 - a) pre-reading
 - b) post activity to pursue identification, clarification of

information and fact

Music and Drama

1. Learning of new songs
2. Making of musical instruments
3. Making up words of songs to fit well known titles
4. Prepare
 - a) a play
 - b) a skit
 - c) a stunt
 - d) an operetta
 - e) a dance drama
 - f) a ballet
5. Prepare a story suitable for telling or acting out.

Physical Education and Recreation

1. Learning of folk games
2. Preparation of equipment for camp outs, skating, skiing, snowshoeing, etc.
3. Photography
4. Care and use of knives for whittling, hunting, cleaning, etc.
5. Activities to improve general fitness for the experience

Science

1. Local agriculture
2. Forestry

3. Principles of living things
4. Introduction to water and conservation
5. Weather
6. The changing earth
7. How food is made in green plants
8. Principles involved in setting up a museum
9. Keys for identification in botany and zoology
10. Water sources and resources from maps and aerial photographs
11. Use of geological equipment
12. Recognition of major geological types in school and camp area

Conservation

1. Fire
 - a) use of power machinery
 - b) general fire controls and regulations
 - c) fire fighting methods for camp area as opposed to other methods in other areas
2. Water
 - a) water shed area of camp
 - b) importance of water to man
 - c) pollution
3. Plant
 - a) forestry
 - b) importance to man
 - c) natural covers, second generations and artificial covers
 - d) animal foods

4. Animal
 - a) importance to man
 - b) hunting and fishing laws
 - c) trapping and banding
5. Erosion
 - a) types of erosion, causes, etc.
 - b) methods of correction
 - c) methods of protection
 - d) soil testing

Social Studies

1. Indian lore
2. History of the camp site and the surrounding area
3. Study of location, geography, industry, etc.
4. Sources of supply of water, power, gas, for camp
5. The camp population, housing
6. Interpretation of aerial photographs, maps, sketches, etc.

APPENDIX B

SAMPLE PROGRAMS

NEW SOUTH WALES, AUSTRALIA

CAMP NO. 32 - JUNIOR, COEDUCATIONAL, BROKEN BAY NATIONAL FITNESS CAMP

PROGRAM

DAY BLUE BLACK GREEN RED BROWN YELLOW
TUE. Entry to camp. Resting campers in lodges.
19 General supervision.
Night: Orientation and settling into camp

WED. BANKING AND ORIENTATION
20 BUSHWALK
DIVERSIFIED ACTIVITIES
Night: Unprepared and Dance

ROSTER BUSHWALK

THUR. Roster Games Full day bushcraft
21 HEALTH EDUCATION " " "
Craft Museum Art " "
Craft Art Museum " "
Prepared: Circus Night (Blues, Blacks, Greens) Slides

FRI. Full day bushcraft Games Art Roster
22 " " HEALTH EDUCATION
" " Craft Games Art
" " " Dance Dance
Night: Unprepared, Jan to choose

SAT. Museum Roster Art Games
23 Games Gym Games Nature
Dance Games Museum Craft Gym
Art Dance Dance Craft Museum
Night: Prepared - Television Night (Reds, Browns, Yellows)

DAY	BLUE Gym	BLACK Birds	GREEN Birds	RED Birds	BROWN Roster	YELLOW Craft
SUN. 24	SONG AND DANCE IN MESS HALL Free choice: Wharf; Walk; Ground and Beach; Games; Craft Night: Camp Service and slides					
MON. 25	Aboriginal lore, plant studies, social Studies - Patonga area Night: Dance Night					
TUE. 26	Roster Project Birds Night: Campfire	BEACH CARNIVAL Games Project	Craft "	Gym Project	Project Birds	Birds Project
WED. 27	Roster Low tide 10:45 a.m. TABLOID SPORTS Night: Final Night Dance (finish 7:00 p.m.)					
THUR. 28	Closing camp activities. Escort of campers					

Birds: Relate birds to their habitat e.g., sea, heath land. Try a little bird watching. Introduce the topic early in camp so that observation can begin in free time around the camp area.

POINT WOLSTONCROFT

Program Junior Co-educational Camp No. 7 All groups co-educational

ACACIA GREVILLEA HAKEA BORONIA LAMBERTIA CROWEA PERSOONIA TELOPEA

F ESCORT OF CAMPERS - ARRIVAL IN CAMP - 11:30 A.M.
 R ENTRY TO CAMP - ALLOCATION TO LODGE GROUPS - LUNCH
 I. BANKING - LODGE CLEANING DEMONSTRATION - ORIENTATION - SWIM
 ALLOCATION TO WORK GROUPS

Evening: Introductory Night - Dancing (All staff)

S Roster Local Geography Take "Fruito"

A Bushwalk Camp History
 T. DIVERSIFIED ACTIVITIES

DIVERSIFIED ACTIVITIES
 Table Tennis, Box hockey, Horse shoes,
 Quoits, Shuffle-board
 BUSHWALK Local geography
 Camp history

Evening: Stunts and Games

S Marine Marine Games Roster
 U Marine Marine Swim Art
 N. TABLOID GAMES COMPETITION

Swim Aboriginal lore
 Dance Aboriginal lore

Evening Bar - B - Que Tea Camp Service

M Swim Marine Marine Roster Games Trampoline Games
 O Dance Marine Marine Art Swim Local hist. Swim
 N. Trampoline Nature Sand Model Swim Aboriginal lore Art
 Nature Trampoline Cook Out Dance Aboriginal lore Dance Cook out

Evening: Campfire GAMES AND RELAYS Campfire

T Roster

U DAY OUT OF CAMP - TAKE LUNCH

E. Evening: Amateur Night

	ACACIA	GREVILLEA	HAKEA	BORONIA	LAMBERTIA	CROWEA	PERSOONIA	TELOPEA
W	Aboriginal lore	Roster	Games	Trampoline	Art	Marine	Marine	Marine
E	Aboriginal lore	Art	Swim	Cook out	Cook out	Cook out	Marine	Marine
D.	Art	Swim	Trampoline	Cook out	Cook out	Cook out	Games	Swim
	Cook out	Swim	Dance	Cook out	Softball	Trampoline	Swim	Dance
	Campfire	REDEX	TRIAL	Campfire	REDEX	TRIAL		
T								Roster
H		SWIMMING	CARNIVAL					
U	Dance	Gym	Aboriginal lore	Marine	Marine	Marine	Sand Model	Dance
R.	Local hist.	Cook out	Aboriginal lore	Marine	Marine	Marine	Cook out	Trampoline
	Campfire		Competition Night				Campfire	
F	Games	Softball	Trampol.	Local Hist. Games	Gym	Roster	Sand model	Local hist.
R	Swim	Dance	Dance	Softball	Swim	Sand Model	Gym	Local hist.
I.	Softball	Sand Model	Gym	Dance	Dance	Local hist.	Art	Softball
	Gym	Local hist.	Softball	Sand model	Sand model	Dance	Dance	Nature
	Party Night	-	Fancy Dress Ball					
S	Sand model	Roster	Local history	Rock & River	Rock & River	Softball	Rock & River	Gym
A	Rock & River	Art	Rock & Gym	Local history	Local history	Rock & River	Softball	River
T.								
			BEACH CARNIVAL	CLOSING CAMPFIRE				

SANDWICHES:

Preparation to leave camp

Inspection of Camp 11:00 a.m.

Assembly 11:30 a.m.

Train 1:50 p.m.

ESCORT OF CAMPERS

MYUNA BAY

PROGRAMME

JUNIOR BOYS' CAMP NO. 34

	BONDI	CRONULLA	COOGEE	MAROUBRA	NIGHT
W	Library	Minor games	Net ball	Wood crique	Individual
E		Meeting with Camp		Sister	
D.	Minor games	Wood crique	Library	Net ball	Campfires
	Wood crique	Net ball	Minor games	Library	
	Net ball	Library	Wood crique	Minor games	
T			Rock	Roster	
H	Bivouac	Trampoline	Studies	Archery	Stunts
U		Puddox		Puddox	& Games
R.		(V.Maroubra)	Trampoline	(V.Cronulla)	
F	Bivouac	Bivouac	Roster	Rock	
R			Archery	Studies	Variety
I.	Trampoline		Softball V.	Softball	Night
S	Roster	Bivouac	Craft	Shore	
A	Archery			Studies	Story
T.	Puddox	Mats	Puddox		Night
	(V.Coogee)	Art	(V.Bondi)	Craft	
S	Craft	Roster	Shore		Service,
U	"	Archery	Studies	Trampoline	Films
N.	Campers choice: library, craft, trampoline, fishing				
M	Rock	Shore		Roster	
O	Studies	Studies	Bivouac	Jungle gym	News-
N.	Softball Match			Mats	paper
	(Bondi V. Cronulla)			Art	
T	Jungle gym	Roster			
U	Art	Jungle gym	Bivouac	Bivouac	Campfire
E.	Shore		Mats		
	Studies	Craft	Art		
W	Nature	Rock	Roster	Bivouac	Party
E	Walk	Studies	Jungle gym		Night
D.	Camp Cleanup	Softball	Game	Showers	
T	Rising Bell	6:00	a.m.	Dress and pack	
H	Breakfast	7:00	a.m.		
U	Banking and Emu Parade				
R.	Buses	9:45	a.m.	Train Dora Creek	10:16 a.m.
Wet	Weather Activities: Indoor Relays, Indoor Gym.,				
	Primitive Dance, Indoor Tabloid,				
	Library				

MYUNA BAY N.F.C.

Junior Boys & Girls (Each lodge acts as an independent unit)

	OSPREY	PELICAN	HERON	KINGFISHER	CORMORANT
T	LODGE ALLOCATION				
U	Banking, hospital visitation, camp routine, medicine				
E.	collection, orientation. INTRODUCTORY NIGHT				
W	Roster	Project	Library	Jungle gym	Trampoline
E	Trampoline	book	museum	Library	Jungle gym
D.	Jungle gym	Games	Project	museum	Library
	Library-	Trampoline	book	Project	museum
	museum	Jungle gym	Games	book	Project
	Project	Library-	Trampoline	Games	book
	book	museum	Jungle gym	Trampoline	Games
	SMALL GROUP CAMPFIRES				
T	Shore	Roster	Nature	Trampoline	Gym
H	studies	Jungle gym	Games	Rock	Shore
U	Craft	Rock	Art (Abo.)	studies	studies
R.	ASTRONOMY (Games, Relays, Film)				
		Studies		Library	
F	Bivouac	Shore	Roster	Jungle gym	Trampoline
R	Bivouac	studies	Trampoline	Swimming	Library
I.	Bivouac	Games	Carnival	Games	museum
	STORIES AND SONGS				
					Carnival
S	Bivouac	Project	Swimming	Roster	Jungle gym
A	Swimming	Dancing	Dancing	Shore	Aboriginal
T.	Competitive	Games	Rock St.	studies	lore
	PREPARED CAMPFIRE CONCERT				
					Craft
S	Trampoline	Nature	Jungle gym	Choice	Roster
U	Water	trail	Choice	Dancing	Dancing
N.	safety	Craft	Boomerang Demonstration		
	CAMP SERVICE - Magazine Preparation				
					Film
M	Roster	Bivouac	Gymnastics	Nature	Water Safety
O	Jungle gym	Bivouac	Water	trail	Gymnastics
M.	Rock	Bivouac	safety	Games	Choice
	studies		Craft	Gym	
	MINI OLYMPICS				
T	Dancing	Bivouac	Roster	Water	Nature
U	Project	Swim	Shore	safety	trail
E.	Project	Trampoline	studies	Project	Rock
				Craft	studies
	FANCY DRESS PARTY AND DANCE				
W	Nature	Roster	Project	Aboriginal	Choice
E	WATER CARNIVAL				
				art	
D.	PROJECT BOOK				
	MONSTER QUIZ - FILM				
T	Roster				
H	Lodge Cleaning				
U					
R.					

ISLAND OUTDOOR SCIENCE SCHOOL

TORONTO DISTRICT SCHOOL ONTARIO

Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:30-8:00		Time to rise and dining room duty			
8:00-8:45		Breakfast			
8:45-9:00		Dorm cleaning			
Period 1					
9:00-10:30	Orientation of Staff	Social studies Farm animals Pond life Conservation Map, compass & birds Plants & animals	Farm animals Social studies Pond life Conservation Map, compass & birds Plants & animals	Pond life Conservation Map, compass & birds Plants & animals Farm animals Social studies	Conservation Map, compass & birds Plants & animals Pond life Pond life Plants & animals
Period 2					
10:30-11:30	Reception of classes	Social studies Farm animals Conservation Map, compass & birds Plants & animals Pond life Notebook	Farm animals Social studies Conservation Map, compass & birds Plants & animals Pond life Notebook	Conservation Map, compass & birds Plants & animals Pond life Farm animals Social studies Notebook	Pond life Conservation Map, compass & birds Plants & animals Conservation Pond life Notebook
11:30-12:00	Unpacking & settling in				
12:00-1:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00-1:30	Rest period	Rest period	Rest period	Rest period	Rest period

Time	Monday	Tuesday	Wednesday	Thursday	Friday
Period 3 1:30-2:30	Pond life Conservation Map, compass & birds Plants & animals Social studies Farm animals	Map, compass & birds Plants & animals Social studies Farm animals Pond life Conservation	Map, compass & birds Plants & animals Farm animals Social studies Pond life Conservation	Plants & animals Pond life Conservation Map, compass & birds Map, compass & birds Conservation	Plants & animals Pond life Conservation Map, compass & birds Map, compass & birds Conservation
Period 4 2:30-3:30	Conservation Map, compass & birds Plants & animals Pond life Social studies Farm animals Notebook	Plants & animals Pond life Social studies Farm animals Conservation Map, compass & birds Notebook	Plants & animals Pond life Farm animals Social studies Conservation Map, compass & birds Notebook	Map, compass & birds Plants & animals Pond life Conservation Plants & animals Map, compass & birds Notebook	Map, compass & birds Plants & animals Pond life Conservation Map, compass & birds Notebook

CROOK COUNTY (OREGON, U.S.A.) SCHOOL DISTRICT

OUTDOOR EDUCATION PROJECT

The School Camp Curriculum: Student campers will very definitely be in school with scheduled periods of instruction planned for in the daily program: Science, conservation education, nature study, weather, astronomy, map and compass, oral language, creative writing, group living, art music, crafts, arithmetic, development of desirable work habits, healthful living, and recreation are the major areas of the camp curriculum.

Daily Schedule:

A.M.	6:45	Rise and shine!
	7:15	Flag Ceremony
	7:30	Breakfast
	8:30	Camp and Cabin Kapers
	9:30	Instructional Period
	11:30	Recreation
	12:05	Wash-up
	12:15	Noon Meal
P.M.	1:00	Quiet hour
	2:00	Instructional Period
	4:30	Recreation
	5:15	Showers and Wash-up
	5:50	Flag Ceremony
	6:00	Evening Meal
	7:00	Free Time
	7:30	Field Study and Evening Camp Fire
	9:00	Bed Time
	9:30	Lights out!

EXPERIMENTAL OUTDOOR SCHOOL
CAMP KIWANIS (ALBERTA) COEDUCATIONAL

PLANNED SCHEDULE

(MORNING)

CAMP TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6:45 a.m.		Boys' shower	Girls' shower	Boys' shower	Girls' shower	Boys' shower
7:15 a.m.		Girls' shower	Boys' shower	Girls' shower	Boys' shower	Girls' shower
7:50 a.m.		Flag raising	Flag raising	Flag raising	Flag raising	Flag raising
8:00 a.m.		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:30 a.m.		Clean cabins	Clean cabins	Clean cabins	Clean cabins	Clean cabins
9:00 a.m.	Arrival - unpack	Inspection	Inspection	Inspection	Inspection	Inspection
9:30 a.m.	Make beds	Animals	Insects -	Meteorology	Map reading	Pack
10:00 a.m.	Regulations routines	(Mammals)	lecture	Birds session	Compass	Return home
10:30 a.m.	Tour of camp	Meteorology	Observation			
11:00 a.m.	Cabin inspection	Campcraft - (fires & knives)	Collection			
11:30 a.m.	Lunch	Lunch	Lunch	Lunch	Lunch	
12:00 a.m.	Presentation of Inspection Awards - songs	Inspection award-song	Inspection award-song	Inspection award-song	Inspection award-song	
12:30 noon						

PLANNED SCHEDULE (...Continued)
(AFTERNOON)

CAMP TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1:00 p.m.	Rest	Rest	Rest & Let- ter home	Rest, pro- ject plan	Rest	
1:30 p.m.	Topography session Workbooks	Fish and pondlife	Hike to Pioneer Missionary Monument	Flowers	Workbook session All phases completed	
2:00 p.m.						
2:30 p.m.	Recess					
3:00 p.m.	Trees & conservation	Dairy farm & pioneer life		Dairy farm & pioneer life		
3:30 p.m.	Workbooks Games					
4:00 p.m.						
4:30 p.m.						
5:00 p.m.						
5:30 p.m.	Supper	Supper	Supper on the trail	Supper	Skit preparation Supper	
6:00 p.m.		Skit planning			Free time	
6:30 p.m.	Meteorology class	Games - fire lighting Relays	Watch beavers	Campcraft - shelters & knots		
7:00 p.m.						
7:30 p.m.	Torch pro- cession & Chapel service	Campfire program	Return to camp		Closing	

PLANNED SCHEDULE (...Continued)

CAMP TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 p.m.				Campfire songs	Awards - skits - songs (parents welcome)	
8:30 p.m.	Indian lore					
10:00 p.m.	Lights out	Lights out	Lights out	Lights out	Lights out	

Weather observations made daily prior to meals

OUTDOOR LABORATORY SCHOOL 1968

Time difference 2 hours (i.e., Calgary time = 10:00 p.m., Camp time = 8:00 p.m.)

GOOD WEATHER TIMETABLE

CAMP KIWANIS - COEDUCATIONAL

Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:50 a.m.	Camp Activities: Flag raising, weather observations, announcements, etc.	Breakfast			
8:00 a.m.	Leave school by bus (Calgary time)	Arts & Crafts	Moose Mountain trip		
9:00 a.m.	Travel Trip Calgary-Seebee-Camp	Use of local Materials - Clay Grasses Moss Pebbles	Ice Caves Fossil collection Map work (contours) (locating)		
	1. Bearspaw Dam			A	Science Activities
	2. Cochrane Van-tage Point			R	Hike to New Site for studies
	3. Tour of Cochrane			T	1. Fish identification & census
	4. Glaciation			S	2. Survival in the woods
	5. Seebee Dam			&	3. Compasses
	Lunch en route - arrive at 10:30 (camp time)			C	4. Study of a rotten log
11:00 a.m.	Camp Orientation			R	
12:00 noon	Camp Director LUNCH			A	
12:00 noon				F	
2:00 p.m.	Science Activities Hike to Beaver Dam	Dairy or Ranch Study Trip	Pack a Lunch Moose Mountain Forestry Look-out Tower Alpine Vegetation Study Conifer Identification	T S	Visit and Demonstration by R.C.M.P. Students prepare for parents' visit

CAMP KIWANIS (Continued)

Time	Monday	Tuesday	Wednesday	Thursday	Friday
5:00 p.m.	DINNER				
7:00 p.m.	<u>Science Activities</u> 1. <u>Astronomy</u> Groups A & B 2. <u>Mammal Census</u> Groups C & D	<u>Science Activities</u> 1. <u>Insect Night Study</u> Groups A & B 2. <u>Astronomy</u> Groups C & D	<u>Science Activities</u> 1. <u>Mammal Census</u> 2. <u>Astronomy</u> Groups C & D	<u>Science Activities</u> 1. <u>Mammal Census</u> 2. <u>Astronomy</u> Groups C & D	<u>Parents visit Camp Evening Activities</u> <u>Awards Students' Program Games</u>
8:30 p.m.	Camp Fire (Sing Song)				
9:15 p.m.	Lights Out				Students return to Calgary with parents

Weather observations made
daily prior to meals

INCLEMENT WEATHER TIMETABLE
OUTDOOR SCHOOL PROJECT AT CAMP KIWANIS

(COEDUCATIONAL)

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 a.m.	Traverse Trip (Lunch in camp shelters at Seebee)	<u>Art</u> as Regular Plan	<u>Elementary</u> <u>Science Study</u> Groups A & B "Small things" - planaria - protozoa - rotifers - paramecium Change at 10:30	<u>Art</u> as Regular Plan	<u>Free Project</u> <u>Period</u> 1. Plastic mounts 2. Bird houses and feeders 3. Terrariums (cardboard box & plaster)
12:00 noon	LUNCH		Groups C & D Construction of <u>Insect Collecting</u> <u>Equipment</u> - nets - spreading boards - killing jars - display boxes		Spare time to complete any unfinished projects

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INCLEMENT WEATHER TIMETABLE (Continued)

Time	Monday	Tuesday	Wednesday	Thursday	Friday
2:00 p.m.	<u>Indoor Projects</u> Plant mounting - identification keys conifers lower plants bird identification using study skins	<u>Elementary Science Study Groups A & B</u> "Small Things" - principles of magnification - staining - onion cells - topographical	<u>Map Work</u> - Relief Maps (plaster of paris) Diaramas (i.e. moon-scape) - Topographical	<u>Elementary Science Study Groups A & B</u> "Small Things" - crystals - yeast cells - molds Change at 3:30 <u>Groups C & D Construction of Simple Weather Instruments</u> - wind vane - hygrometers - barometers etc.	Visit and Demonstration by R.C.M.P. (film)
7:00 p.m.	Films	<u>Change Groups at 3:30 p.m.</u> <u>Groups C & D Science Projects</u> - Rock cutting and polishing - Fossil Molds (Plaster of Paris) - Display Boxes (Mounting)	Map of camp area (followed by Relief Map of Camp area)		Students prepare for parents' visit
8:30 p.m.	Campfire inside	Campfire inside	Campfire inside	Campfire inside	Campfire inside

OUTDOOR EDUCATION EXPERIMENT

REGINA (SASKATCHEWAN) PUBLIC SCHOOL SYSTEM

CAMP TA-WA-SI, ECHO LAKE

PROVISIONAL DAILY TIME SCHEDULE - (Subject to change)Monday, June 15

Morning	7:30	Arrive at school
	8:00	Leave school by S.T.C. bus
	9:15	Arrive at Fish Culture Station - Manager, Mr. J. Marchinko, Tour for about one hour and a quarter.
	10:45	Arrive at Camp Ta-Wa-Si
	10:45-11:55	Unpacking and orientation
	11:55	Wash
	12:15	Luncheon
	12:45	Rest
Afternoon	1:30- 2:45	Geology 1 - Mr. D. Kent, Senior Re- search Geologist of the Department of Mineral Resources Groups 1 & 2.
		History - Mrs. S. Regan - President of Fort Qu'Appelle Historical Society Groups 3 & 4.
	2:45- 4:00	Change
	4:10- 5:30	Indians - Sioux Chief Max Goodwill of the Standing Buffalo Reserve.
	5:30	Wash
	5:45	Dinner
	7:00- 7:30	Self Orientated Study
	7:45- 9:15	Campfire by the staff
	9:30	Bedtime

Tuesday, June 16

Morning	7:00	Rise
	7:30	Wash self and tidy cabins
	8:15	Breakfast
	8:45	Cabin inspection
	9:10-10:30	Group 1 - Bird and Marsh Life - Mrs. Tempel
		Group 2 - Geology 2 - Miss Tait
		Group 3 - Tree & Plant Life - D.N.R.* person
		Group 4 - Boat Safety - Mr. M. Lee - Physical Education consultant

* Department of Natural Resources

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CAMP TA-WA-SI TIME SCHEDULE (Continued)Tuesday, June 16 (Continued)

Morning	10:30-11:50	Group 1 - Geology 2 - Mr. Doty Group 2 - Tree & Plant Life - D.N.R. person Group 3 - Boat Safety - Mr. Lee Group 4 - Bird and Marsh Life - Mrs. Tempel
	11:55	Wash
	12:15	Luncheon
	12:45	Rest
Afternoon	1:30- 2:40	Group 1 - Tree and Plant Life - D.N.R. person Group 2 - Boat Safety - Mr. Lee Group 3 - Bird and Marsh Life - Mrs. Tempel Group 4 - Geology 2 - Miss Tait
	2:45- 4:00	Group 1 - Boat Safety - Mr. Lee Group 2 - Bird and Marsh Life - Mrs. Tempel Group 3 - Geology 2 - Mr. Doty Group 4 - Tree and Plant Life - D.N.R. person
	4:00	Free time - Swimming - Mr. Lee
	4:30	Study period in the Quonset hut
	5:30	Wash
	5:45	Dinner
	7:00- 7:30	Self Orientated Study
	7:45- 9:15	Campfire by the Girls
	9:30	Bedtime

Wednesday, June 17

Morning	7:00	Rise
	7:30	Wash self and tidy cabins
	8:15	Breakfast
	8:45	Cabin inspection
	9:10-10:25	Group 1 - Pottery - Mr. David Ross of the Hanson-Ross Pottery in Fort Qu'Appelle Group 2 - Bird and Marsh Life - Mr. Doty Group 3 - Compass course Group 4 - Trees and plant life - Miss Tait

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CAMP TA-WA-SI TIME SCHEDULE (Continued)Wednesday, June 17

Morning 10:35-11:50 Group 1 - Bird and Marsh Life -
Mr. Doty
Group 2 - Pottery - Mr. Ross
Group 3 - Trees and Plant Life -
Miss Tait
Group 4 - Compass Course

11:55 Wash
12:15 Luncheon
12:45 Rest

Afternoon 1:30- 2:40 Group 1 - Compass Course
Group 2 - Tree and Plant Life -
Miss Tait
Group 3 - Pottery - Mr. Ross
Group 4 - Bird and Marsh Life -
Mr. Doty

2:40- 4:00 Group 1 - Tree and Plant Life -
Miss Tait
Group 2 - Compass Course
Group 3 - Bird and Marsh Life -
Mr. Doty
Group 4 - Pottery - Mr. Ross

4:00 Free time - Swimming - Mr. Lee
4:30 Study period
5:30 Wash
5:45 Dinner
7:00- 7:30 Self Orientated Study
7:45- 9:15 Campfire by the Boys
9:30 Bedtime

Thursday, June 18

Morning 6:45 Rise - bird watching
7:30 Wash self and tidy cabins
8:15 Breakfast
8:45 Cabin inspection
9:10 Compass trail with natural observation
the whole group

11:55 Wash
12:15 Luncheon
12:45 Rest

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CAMP TA-WA-SI TIME SCHEDULE (Continued)Thursday, June 18 (Continued)

Afternoon	1:30- 2:45	Groups 1 & 2 - sketching Groups 3 & 4 - self orientated free time (a) Tree and Plant Life (c) Pool (b) Bird and Marsh Life (d) Waterfront
	2:45- 4:00	Change
	4:00	Free time - Swimming - Mr. Lee
	4:30	Finish sketches
	5:30	Wash
	5:45	Dinner
	7:00- 7:30	Display of pictures, notebooks and collections
	7:45- 9:15	Campfire by the Staff
	9:30	Bedtime

Friday, June 19

Morning	7:00	Rise
	7:30	Wash self and pack suitcases
	8:15	Breakfast
	8:45	Cabin inspection and load buses as per school
	9:30	Arrive at Fort Qu'Appelle
	9:30-10:15	Imperial School visit site of H.B. Fort and museum Birchwood School visit cemetery over- looking townsite - 15 minutes to change groups
	10:30-11:15	Change places
	11:15	Leave Fort Qu'Appelle
	12:00	Arrive at Indian Head Experimental Farm - Superintendent Mr. J. Roe Foster
	12:00	Sandwich luncheon at the pavilion
	12:30	Tour of farm
	1:45	Leave the farm
	3:00	Arrive at School

APPENDIX C

TEACHER'S GUIDE AND WORK BOOKS
FOR CAMPERS

A. Australia

New South Wales - Camp School Project Book

Address National Fitness Branch
Department of Education
First Floor, M.L.C. Building
Miller Street,
North Sydney, N.S.W. Australia

B. Canada

1. Calgary "Transverse Trip" and
"Ecology of a Slough"
by R. F. Sheppard

Address Public School Board Office

2. Toronto For resource materials and courses
given at the Albion Hills Conser-
vation School

Address The Metropolitan Toronto and
Region Conservation Authority

3. Toronto "Island Natural Science School"
Workbook

Address Board of Education for the City of
Toronto

C. United States of America

1. Corvallis Workbook materials prepared by
Margaret Milliken in cooperation
with Oregon State Game Commission

Address Oregon State University
College of Education
Corvallis, Oregon, 97331

2. Gary "Work Book for Deep River Outdoor Education Center"

Address Community School Corporation
School City of Gary
620 East 10th Place,
Gary, Indiana, 46402
3. Lakewood "Outdoor Education Curriculum Guide - Grade 6"

Address Jefferson County Public Schools
1580 Yarrow St.,
Lakewood, Colorado
4. Portland "The Field Study Notebook for the Outdoor School" - compiled by Warren C. Gilfillan, Director Robert A. Burgens, Instructional Director

Address Regional Outdoor Education Office
1441 S.E. 122nd Avenue
Portland, Oregon, 97233
5. Seattle "Natural Science and Conservation Education" - Teacher's Edition, June, 1963

Address Highline School District 401
253 South 152nd Street
Seattle, Washington
6. Seattle "Inter Disciplinary Outdoor Education"

Address Shoreline School District No. 412
158th and 20th Ave., N.E.
Seattle, Washington, 98155

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